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Fertilizer Report

August 1 to December 31, 1917

JAMES W. KELLOGG,
Chief Chemist

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LETTER OF TRANSMITTAL.

DEPARTMENT OF AGRICULTURE
BUREAU OF CHEMISTRY

Harrisburg, Pa., March 4, 1918.

Hon. Charles E. Patton,
Secretary of Agriculture,
Harrisburg, Pa.

Dear Sir:—I have the honor to transmit herewith for your approval a report of the chemical analyses made by this Bureau of the samples of commercial fertilizers received from authorized sampling agents of the Department during the Fall season of 1917.

It is recommended that this report be published in bulletin form for distribution.

Very respectfully,

JAMES W. KELLOGG,
Chief Chemist.

FERTILIZER REPORT

August 1 to December 31, 1917.

INTRODUCTION.

During the Fall inspection season from August 1 to December 31, 1917, the authorized sampling agents of the Department secured from dealers throughout the State and sent to the Bureau of Chemistry for analysis, 492 samples of fertilizers. Of this number, 406 samples representing those brands of fertilizers registered with the Department as required, were analyzed and the results secured are included in this Report. As less than the usual number of samples were obtained during this season's work, it was deemed advisable to analyze each sample, not only where one was received representing a single brand, but where two or more of the same brand were secured, rather than to analyze a composite sample consisting of two or three samples of like brands as heretofore has been the practice. Because of the amendment to the law with respect to nitrogen guarantees, taking into consideration also the high price of chemicals, determinations were not made in the nitrogenous fertilizers for the "active" and "inactive" forms of nitrogen. Those fertilizers furnishing nitrogen were examined microscopically for the presence of untreated leather, hair, hoof, horn and wool waste and only accidental traces noted. No violations were observed in the case of those brands where it is required that the source of phosphoric acid shall be from animal bone when the word "bone" forms a part of the brand name.

The samples of those registered brands received, therefore, were analyzed for nitrogen, total, available and insoluble phosphoric acid and water soluble potash, where guarantees for these plant foods were given, in order to determine whether or not these guarantees were correctly shown and if the fertilizers would contain the amount of plant food as advertised. The samples analyzed represented 273 different brands, the output of 75 companies and the classes included, together with the number of samples in each were as follows: 109 Complete Fertilizers furnishing nitrogen, phosphoric acid and potash; 203 Nitrogen and Phosphoric Acid Fertilizers furnishing these forms of plant food and including dissolved or acidulated bone and fertilizers of similar character; 22 Ground Bone Fertilizers furnishing nitrogen and phosphoric acid; 62 Acidulated Phosphate Fertilizers furnishing phosphoric acid; 5 Rock and Potash Fertilizers furnishing phosphoric acid and potash, and 5 Miscellaneous Fertilizers including "Phospho Plaster," Pulverized Phosphate Rock and Bone and Tankage Mixture and Dried Ground Blood.

In the inspection work of the corresponding Fall season of 1916, the number of samples of Complete Fertilizers exceeded those of the Nitrogen and Phosphoric Acid class and of the samples secured during the Spring season of 1917, the Complete Fertilizers were about equal in number to those furnishing Nitrogen and Phosphoric Acid, while for the season covered by this Report, there were twice as many samples of Nitrogen and Phosphoric Acid Fertilizers as there were of the Complete group, thus indicating the increasing scarcity of those brands of fertilizers which furnish potash.

The number of those samples which failed to meet their guarantees has not been great and was less than observed during the Spring inspection season but exceeded considerably the proportion of those found deficient during the Fall season of 1916. Of the total number analyzed, 61 or 15.1 per cent. contained less plant food than claimed. During the Spring season 16.9 per cent. were found deficient and those of the previous Fall inspection showed 8.9 per cent. deficient. In many of these cases, as will be noted by referring to the detailed tables of analyses, where one element was found to be less than guaranteed, the others exceeded the claimed amounts thus causing a balance of the constituents furnished. The proportion of "overages" exceeded the "deficiencies."

The average composition of the several groups compared with those of previous seasons show no marked variation in composition except slight decreases in the average contents of nitrogen and potash in Complete Fertilizers and nitrogen in the Nitrogen and Phosphoric Acid Fertilizers.

There has been a marked increase in the selling prices over those of previous seasons amounting in the average prices of from $1.80 to $4.78 a ton as compared with the previous Spring season's prices. A comparison with those prices prevailing during the 1916 Fall inspection work shows the average increases were from $2.22 to $6.13 a ton indicating that in a year's time there has been a marked increase in the retail prices for those brands of fertilizers sold during the period covered by this Report.

The most noticeable variations, or inconsistencies, in retail prices were observed in those brands of fertilizers having like formulas and furnishing the same amounts of elements of plant nutrition. The 23 brands of Complete Fertilizers, having the formulas 1-8-1, including

31 samples and all advertised to contain 1.00 per cent. nitrogen as ammonia, 8.00 per cent. available phosphoric acid and 1.00 per cent. potash, sold for from $24.75 to $35.00 a ton, a difference of $10.25 in brands of like composition. Several brands, showing a considerable difference in price and having the same composition were prepared by the same firm. In the case of the 10 brands of Complete Fertilizers showing the formula 1-10-1, the prices were from $27 to $40 a ton, a difference of $13 in brands supplying like amounts of plant food. Similar variations were also noted in those having other like formulas where several brands are represented. This condition, with respect to selling prices, was referred to in the Report covering the Spring inspection work and in the following remarks under "Complete Fertilizers" will be indicated more in detail. Because of these marked variations, the unsettled condition of the market, and other uncertain factors, no attempt has been made to establish any valuations for the several brands of fertilizers included in this Report.

ACKNOWLEDGMENTS.

Acknowledgment is herewith made and thanks extended to the Secretary of Agriculture, Hon. Charles E. Patton, Hon. George G. Hutchison, General Agent, and Mr. H. E. Klugh, Chief Clerk, and each member of the Bureau Staff for assistance and co-operation in carrying on the season's fertilizer inspection work.

Mr. V. B. Hausknecht, First Assistant Chemist, had charge of the reception and preparation of the samples and supervision of the details of the analytical work, making check determinations where required. The microscopical examinations were made by H. E. Gensler, and the following assistants performed the analytical work: Messrs. J. E. Shull, William Weber, F. J. Holben, G. J. Kuhlman, Jr., W. E. Huber and P. H. Fairlamb.

FERTILIZER LAWS.

The following laws regulating the sale of fertilizers are included in this report for reference as to the requirements necessary in selling fertilizers in Pennsylvania. The Act of May 1, 1909, commonly referred to as the "New Fertilizer Law," was amended May 29, 1917, by changes in section 1 with respect to labeling and guarantees, and in section 3, making changes in schedule of registration fees. This law as amended and now in force together with the Bone Law, approved April 23, 1909, are as follows:

FERTILIZER LAW

As amended May 29, 1917.

No. 205.

AN ACT

To regulate the manufacture and sale of commercial fertilizers; prescribing penalties for its violation, and repealing an act entitled "An act to regulate the manufacture and sale of commercial fertilizers; providing for its enforcement, and prescribing penalties for its violation," approved the twenty-fifth day of March, Anno Domini one thousand nine hundred and one.

Section 1. Be it enacted, &c., That all corporations, associations, partnerships, or persons, before selling or offering for sale any commercial fertilizer in the Commonwealth, except the dung of domestic animals, lime, marl, and wood ashes, shall brand or attach to each bag, barrel, or package in a conspicuous place on the outside thereof, a plainly printed statement giving the following particulars and no others:—

(1) The number of pounds of fertilizer contained in the package.

(2) The name, brand, or trade-mark under which the fertilizer is sold.

(3) The name and principal address of the manufacturer, importer, or other person putting the fertilizer on the market in this Commonwealth.

(4) The minimum percentage of each of the following constituents which the fertilizer may contain: (a) Nitrogen; (b) nitirogen equivalent to ammonia; (c) total phosphoric acid; (d) available phosphoric acid; (e) potash soluble in distilled water. The potash may be claimed "derived from," or "equivalent to," sulphate of potash, if there is not a sufficient amount of chlorine present to unite with one-half (½) of one per centum (1%) of actual potash (K_2O). In the case of undissolved bone, tankage, phosphate rock, and similar materials in their natural and untreated conditions, when sold unmixed

with other substances, the minimum percentage of the total phosphoric acid therein may be stated, instead of the percentage of total and available phosphoric acid. But, in the case of basic phosphatic slag, the available phosphoric acid shall be stated on the basis of the results of an analysis by the Wagner method, so-called, until such time as the Association of Official Agricultural Chemists of North America shall adopt an official method of analysis for basic slag, after which the available phosphoric acid shall be stated on the basis of an analysis by the method of said association.

Section 2. Every manufacturer or importer of commercial fertilizers, as specified in section one of this act, shall, on or before the first day of January of each year, or before offering them for sale in this Commonwealth, file annually with the Secretary of Agriculture a statement of the names and number of brands of such commercial fertilizers, having distinct trade-names, that he shall offer for sale during the next ensuing year, and a copy of the analysis of each one of such brands of commercial fertilizers, as required by section one of this act.

Section 3. In addition to the statement required by section two of this act, every manufacturer or importer of commercial fertilizers shall, on or before the first day of January of each year, or before offering them for sale in this Commonwealth, file annually with the Secretary of Agriculture an affidavit showing the amount of each brand of fertilizer, having a distinct trade-name, sold within the Commonwealth during the last preceding year; and if the said amount shall be one hundred and fifty tons or less, he or they shall pay or cause to be paid to the Secretary of Agriculture the sum of fifteen dollars for each and every brand of such commercial fertilizer, having a distinct trade-name, sold within the State during the last preceding year; and if the said amount shall exceed one hundred and fifty tons, and be not more than two hundred and fifty tons, he or they shall pay the sum of twenty dollars, as aforesaid; if the said amount shall exced two hundred and fifty tons, and not more than four hundred tons, he or they shall pay the sum of thirty dollars; if the amount shall exceed four hundred tons, and not more than five hundred tons, he or they shall pay forty dollars; and if the amount shall exceed five hundred tons, he or they shall pay fifty dollars. If such manufacturer or manufacturers, importer or importers, shall not have made any sales within the Commonwealth during the preceding year, he or they shall pay the sum of fifteen dollars upon each such brand, as aforesaid: Provided, That all moneys so received shall be immediately paid by the Secretary of Agriculture into the State Treasury for the use of the Commonwealth.

Section 4. No person shall sell, offer, or expose for sale, in this State, any pulverized leather, hair, ground hoofs, horns, or wool waste, raw, steamed, roasted, or in any form, as a fertilizer, or as an ingredient of a fertilizer or manure, without an explicit statement of the fact; said statement to be conspicuously affixed to every package of such fertilizer or manure, and to accompany and go with every lot, parcel, or package of the same.

Section 5. Any person or persons selling, offering or exposing for sale, any commercial fertilizer or any brand of the same, having a distinct trade-name, without the analysis required by section one of this act, or with an analysis stating that it contains a larger percentage of any one or more of the above-named constituents than is contained therein, or for the sale of which all the provisions of sections two and three have not been complied with, or any person violating any of the provisions of section four of this act, shall be guilty of a misdemeanor, and, on conviction, shall be sentenced to pay a fine of not less than twenty-five nor more than one hundred dollars for the first offense, and not less than two hundred dollars for each subsequent offense. It shall be the duty of the Secretary of Agriculture to enforce the provisions of this act, and all penalties, costs, and fines recovered shall be paid by him or his duly authorized agent, and by him shall be immediately paid into the State Treasury, for the use of the Commonwealth.

Section 6. The Secretary of Agriculture is hereby empowered to collect samples of commercial fertilizers, either in person or by his duly qualified agent or representative, and to have them analyzed, and to publish the results for the information of the public; and for this purpose the said Secretary of Agriculture, such assistants, agents, experts, chemists, detectives, and counsel as he shall duly authorize, shall have full access, ingress, and egress to and from all places of business, factories, barns, buildings, carriages, cars, and vessels, used in the manufacture and transportation, or sale, of any commercial fertilizer. They shall also have power to open any package or vessel containing or supposed to contain any commercial fertilizer, and take therefrom samples for analysis, upon tendering the value of said samples.

Section 7. The term "commercial fertilizers," as used in this act, shall be construed to mean any and every substance imported, manufactured, prepared, or sold for fertilizing or manuring purposes, except the dung of domestic animals, marl, lime, and wood-ashes, and not exempt by the provisions of section one of this act.

Section 8. This act shall go into effect on and after the thirty-first day of July, one thousand nine hundred and nine; and the act entitled "An act to regulate the manufacture and sale of commercial fertilizers; providing for its enforcement, and prescribing penalties for its violation," approved the twenty-fifth day of March, Anno Domini one thousand nine hundred and one, is hereby repealed.

BONE LAW.

No. 95.

AN ACT

Making it unlawful for any person, firm, or corporation, engaged in the manufacture or sale of commercial fertilizers, to use the word "bone" in connection with, or as part of the name of, any fertilizer, or any brand of the same, unless the phosphoric acid contained in such fertilizer shall be the product of pure animal bone; and providing a penalty for violation of the same.

Section 1. Be it enacted, &c., That it shall be unlawful for any person, firm, or corporation, engaged in the manufacture or sale of commercial fertilizers, to use the word "bone" in connection with, or as part of the name of, any fertilizer, or any brand of the same, unless the phosphoric acid contained in such fertilizer shall be the product of pure animal bone.

Section 2. Any person or persons violating the provisions of this act shall be deemed guilty of a misdemeanor, and, upon conviction thereof, shall pay a fine of fifty dollars for the first offense, and a fine of not less than one hundred dollars, nor more than two hundred dollars, for every subsequent offense; such fine or fines to be paid into the State Treasury, for the use of the Commonwealth. The Secretary of Agriculture shall, together with his deputies, agents, and assistants, be charged with the enforcement of this act.

Section 3. All magistrates, aldermen, and justices of the peace throughout this Commonwealth shall have jurisdiction to hear and determine actions arising from violations of the provisions of this act, and shall have authority to hold for court, or to impose the penalty hereby prescribed, subject to appeal, as the law shall direct.

Section 4. This act shall go into effect on the first day of January, Anno Domini nineteen hundred and ten.

Approved—The 23rd day of April, A. D. 1909.

EDWIN S. STUART.

DISCUSSION OF THE RESULTS OF INSPECTION.

As previously indicated the samples of fertilizers received for analysis from the sampling agents during the Fall inspection period included 273 brands, the output of 75 Companies and for convenience of comparison, these brands and samples were arranged in six classes or groups. The Tables which follow show the detailed analysis of each sample together with the brand names, names of Manufacturers, places of sampling, names of selling Agents, guarantees and selling prices prevailing at the place and time of sampling. Each sample was analyzed for nitrogen, total, available and insoluble phosphoric acid and water soluble potash where guarantees for these forms of plant food were given.

COMPLETE FERTILIZERS.

There were 109 samples of complete fertilizers examined, furnishing nitrogen, phosphoric acid and potash, including 76 brands, the output of 35 manufacturing firms. The usual number of grades or brands were included and numbered 28 different formulas, furnishing varying proportions of plant food, ranging from ¼ per cent. to 2½ per cent. nitrogen, 6 per cent. to 12 per cent. available phosphoric acid and from ¼ per cent. to 2 per cent. water soluble potash. The formula 1-8-1, as was the case noted during the Spring inspection work, was being sold in greater proportion than other grades, there being 31 samples and 23 brands. The next formulas in order of proportion of number of brands, were 1-10-1 with 7 brands; 2-9-1 with 6 brands and 1-7-1 and 1-9-1 with 5 brands each. The remaining formulas were represented by from 1 to 3 brands. The guarantees for potash in this class of fertilizers sold during the Fall season were low, as will be noted, the highest guarantee being 2 per cent. The nitrogen varied from .35 per cent. to 2.15 per cent. averaging 1.09 per cent. The available phosphoric acid varied from 6.12 per cent. to 12.10 per cent., averaging 8.94 per cent. and the potash found was from .32 per cent. to 2.66 per cent., averaging 1.28 per cent. The selling prices showed a wide variation ranging from $18.00 to $40.00, averaging $30.26 a ton. There were 3 samples or 2.7 per cent.

deficient in nitrogen, 12 or 11.00 per cent. deficient in available phosphoric acid and 2 or 1.8 per cent. deficient in potash. The usual variations in prices were noted in those brands having the same formula and guaranteed to furnish the same amounts of plant food, especially where several samples were included. Those having the formula ½-8-1, represented by 6 samples were sold from $18.00 to $26.00 and averaged $24.00 a ton. The 8 samples of 1-7-1 grade sold from $25.50 to $35.00, averaging $30.43 a ton. The formula 1-8-1 represented by 31 samples and 23 brands varied in their selling price from $24.75 to $35.00, averaging $29.51 a ton, a difference of $10.25 for fertilizers having the same analysis. Eleven of the samples of this formula represented shipments prepared by the same firm which showed a difference of $9.00 a ton between the lowest and highest selling prices. In the case of the 1-9-1 formula, where 8 samples were received, the prices were from $26.50 to $33.00, averaging $30.36 a ton. In the 10 samples of 1-10-1, the prices were from $27.00 to $40.00, averaging $31.50, showing a difference of $13.00 a ton. The 7 samples of the 2-9-1 grade, sold for from $28.00 to $36.50, averaging $34.50 a ton. In the remaining formula goods where only a few samples were included, variations in minimum and maximum prices were noted although they were not as wide as where a larger number of brands and samples were included.

In order that the average composition of the various grades of Complete Fertilizers together with their selling prices may be compared, the following Table has been prepared showing the average analysis and prices of the brands and samples included in this group. Comparing these average prices with those prevailing during the Spring season, the 1-8-1 grade has increased from $24.23 to $29.51 a ton, which formula, as already noted, were during both seasons represented by the greatest number of samples and brands. The average selling price for the Complete Fertilizers during the Spring inspection season was $28.33 which increased to $30.26 for this grade included in this Report. A study of this Table will show variations in the average selling prices for the various grades. The formula 1-9-2 averaged $34.40 and the 1-6-2 grade $35.00 a ton. For an average of $24.00 a ton, the formulas ½-8-½, ½-8-1 and ½-10-1, could be purchased. The grade 2-8-1 averaged $28.00, while that guaranteed to furnish 1¾-7-1 cost $32.43 a ton. In the same manner the formula 1-7-1 averaged $30.43 as compared with that of 1-8-1, selling for $29.51. Thirty-one dollars purchased a 1-12-1 goods and $31.50 a grade containing 2 per cent. less available phosphoric acid.

In arriving at the formula of the various brands, the guarantee for nitrogen was multiplied by the factor 1.2158 giving the guarantee for ammonia, and this figure together with the guarantees for available phosphoric acid and potash was considered as the formula.

For example, 1-8-1 indicates guarantees of 1 per cent. ammonia, 8 per cent. available phosphoric acid and 1 per cent. potash. In this manner the several formula brands were arranged in the following Table. The detailed analyses of this group will be found in Table 1.

Formula.	Number of brands.	Number of samples.	Nitrogen.	Phosphoric acid.	Potash.	Price.
¼-9-¼,	1	3	.43	9.00	.55	$22.25
½-7-¼,	1	1	.68	8.23	.42	22.50
½-7-½,	1	1	.60	7.65	1.04	22.00
½-8-½,	2	2	.49	8.03	.94	24.00
½-8-1,	3	6	.60	8.63	1.36	24.00
½-8-2,	1	1	.63	8.80	2.02	32.00
½-10-1,	1	3	.82	11.66	1.41	24.00
1-6-2,	1	1	.91	6.12	2.66	35.00
1-7-½,	1	3	.98	7.40	.59	26.00
1-7-1,	5	8	1.00	7.75	1.32	30.43
1-8-¼,	1	1	1.13	9.36	.80	--------
1-8-½,	1	1	1.17	9.37	.60	27.50
1-8-1,	23	31	.99	8.55	1.30	29.51
1-9-1,	5	8	.99	9.28	1.34	30.36
1-9-2,	1	1	1.04	11.16	2.32	34.40
1-10-1,	7	10	.98	11.00	1.33	31.50
1-12-1,	1	1	.86	12.10	1.08	31.09
1¼-8-1,	1	3	1.06	8.07	1.31	31.15
1¼-9-½,	1	2	1.18	8.85	.53	28.50
1½-8-½,	1	1	1.49	8.86	.72	29.00
1½-8-1,	1	1	1.27	7.06	1.52	33.00
1½-10-1,	1	1	1.39	9.49	1.48	31.50
1¾-7-1,	1	2	1.28	7.33	1.14	32.43
2-8-1,	2	2	1.71	8.85	1.80	28.00
2-8-2,	2	2	2.04	8.11	2.12	37.50
2-9-1,	6	7	1.79	9.46	1.36	34.50
2-10-1,	2	3	1.78	10.12	1.27	36.43
2½-8-1,	2	3	1.99	8.52	1.22	38.17
28 Totals,	76	109	1.09	8.94	1.28	30.26

NITROGEN AND PHOSPHORIC ACID FERTILIZERS.

Those fertilizers furnishing nitrogen and phosphoric acid received for analysis numbered 203 samples including 129 brands registered by 62 Companies. This group includes the Dissolved Bones and brands of similar composition and represent the prevailing grade of fertilizers being sold during the latter part of the year. The greater number of brands of this kind of fertilizer, as previously noted, is largely due to the shortage of potash salts thus reducing the number of brands of complete fertilizers, as well as reducing the amount of potash furnished where complete brands are sold. The amount of nitrogen contained varied from 0.47 per cent. to 3.30 per cent. and averaged 1.28 per cent. The available phosphoric acid varied from 5.94 per cent. to 16.25 per cent. and averaged 10.20 per cent. The selling prices showed a wide range of from $20.00 to $45.00 averaging $27.34 a ton. The analysis of the brand showing the low content of phosphoric acid of 5.94 per cent. with 1.14 per cent. of nitrogen, sold for $27.20 and that furnishing 16.25 per cent. of phosphoric acid with 0.54 per cent. of nitrogen, sold for $29.00 a ton. Of this group of fertilizers, 13 or 6.4 per cent. were deficient in available phosphoric acid. The detailed results of the analysis will be found in Table II.

GROUND BONE FERTILIZERS.

The samples of Ground Bone furnishing nitrogen and phosphoric acid secured during the Fall season numbered 22, representing 18 different brands or grades registered by 14 Companies. The composition of this grade of fertilizer also showed variations in analysis, the nitrogen ranging from 0.84 per cent. to 4.60 per cent., averaging 3.11 per cent., and the total phosphoric acid ranging from 16.01 per cent. to 33.29 per cent., averaging 23.78 per cent. The selling prices were from $37.00 to $52.00 and averaged $43.58 a ton. Those samples in which deficiencies occured numbered 4 or 18.1 per cent. in the case of nitrogen, and 3 or 13.6 per cent. in total phosphoric acid.

Determinations were made for the degree of fineness or for that portion of the sample which passed through 1-50th of an inch sieve. That portion which failed to pass this sized sieve was classed as "coarse" and the remaining portion as "fine" in accordance with the recognized methods of analysis. A noticeable difference in the character of the Bone Meals with respect to their fineness or degree of pulverization was observed, the results showing a range in fineness of from 40 per cent. to 90 per cent. averaging 61 per cent.

ACIDULATED PHOSPHATE FERTILIZERS.

The samples of Acidulated or Dissolved Phosphate Rock secured for analysis numbered 62 and included 42 brands registered by 29 Companies. This product is guaranteed to contain only available phosphoric acid and 30 of the samples showed guarantees for 14 per cent., 23 per cent. and 16 per cent. and the few remaining samples were guaranteed for 8 per cent., 10 per cent., 12 per cent. and 13 per cent. available phosphoric acid. The analysis showed variations of from 8.09 per cent. to 18.41 per cent. averaging 15.30 per cent. The selling prices ranged from $17.00 to $24.00 and averaged $20.68 a ton. Two brands which sold for the lowest price analyzed 15.30 per cent. and 16.77 per cent. available phosphoric acid There were 3 brands having a retail price of $24.00 which analyzed 13.56 per cent., 14.61 per cent. and 17.95 per cent. and the average analysis of these was less than an average of the brands sold for the lower figures. Three of the samples or 4.8 per cent. were found to be deficient. The results of analyses will be found in Table IV.

ROCK AND POTASH FERTILIZERS.

This class of fertilizers supplying phosphoric acid and potash is represented by only 5 samples and 3 brands registered by different firms. They were, upon analysis, found to contain from 8.93 per cent. to 12.32 per cent. averaging 10.09 per cent. of available phosphoric acid and from 1.16 per cent. to 2.08 per cent. averaging 1.59 per cent. of potash. The selling prices were from $22.50 to $32.50 and averaged $27.50 a ton. The brand selling for the higher figure contained less phosphoric acid and potash than those selling for the lower figures. The results of analysis will be found in detail in Table V.

MISCELLANEOUS FERTILIZERS.

Only 5 brands and samples of fertilizers classed as "Miscellaneous" were received and analyzed. They consisted of a brand of "Phospho Plaster," containing 4.10 per cent. of available phosphoric acid; 2

brands of pulverized phosphate rock containing 27.66 per cent. and 30.78 per cent. of total phosphoric acid; 1 sample of bone and tankage mixture containing 5.79 per cent. nitrogen and 11.49 per cent. total phosphoric acid and 1 brand of ground blood analyzing 13.10 per cent. of nitrogen. The untreated phosphate rock sold for from $15.00 to $16.50 a ton, the bone and tankage mixture had a value of $40.00 a ton and the selling price quoted for the ground blood was $106.00 a ton. The analyses of these products will be found in Table VI.

DEFICIENCIES.

The proportionate number of samples found to contain less plant food than guaranteed is normal and the "overages" exceeded the "deficiencies." Only those samples were considered as being deficient where it was found that the percentages of nitrogen, available phosphoric acid and potash were .2 per cent. or more below the guarantees. In the case of ground bones where the phosphoric acid is not shown in the available form the samples which were found low in total phosphoric acid were considered as being deficient and where the guarantees for nitrogen and potash were .50 per cent. or less the samples which were .10 per cent. or more below these guarantees were considered deficient. The samples where deficiencies were noted are indicated in the Tables by an asterisk (*) prefixed to these low percentages.

Of the total number of samples analyzed 61 or 15.1 per cent. were deficient being a slightly less proportion than observed during the Spring inspection work and considerably in excess of those noted in the samples received during the previous Fall. There were 336 samples guaranteed to contain nitrogen and 20 or 6.00 per cent. were deficient. Those guaranteed for available phosphoric acid numbered 380 and 34 or 9.00 per cent were deficient. Of the 25 samples guaranteed for total phosphoric acid 5 or 20.00 per cent. were less than claimed. The 114 samples containing potash included only 2 or 1.8 per cent deficient. The following Table will show the number of samples found deficient in nitrogen, phosphoric acid and potash in each group or class of the fertilizers analyzed.

Classes of Fertilizers.	Number of samples.	Deficient in nitrogen.	Deficient in available phosphoric acid.	Deficient in potash.
Complete fertilizers,	109	3	12	2
Nitrogen and phosphoric acid fertilizers,	203	13	18	--------
Ground bone fertilizers,	22	4	*3	--------
Acidulated phosphate fertilizers,	62	--------	3	--------
Rock and potash fertilizers,	5	--------	1	--------
Miscellaneous fertilizers,	5	--------	*2	--------
Totals,	406	20	39	2

*Total phosphoric acid.

AVERAGE ANALYSES AND RETAIL PRICES.

With the exception of the few Miscellaneous samples, the average analyses and selling prices of the several classes of fertilizers secured during the Fall inspection will be found in the following Table:

	Complete fertilizers.	Nitrogen and phosphoric acid fertilizers (dissolved bones, etc.)	Ground bone fertilizers.	Acidulated phosphate fertilizers.	Rock and potash fertilizers.
Number of samples,	109	203	22	62	5
	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.
Moisture,	4.41	4.34	5.02	3.59	4.79
Total nitrogen,	1.09	1.28	3.11	--------	--------
Total phosphoric acid,	10.37	11.89	23.78	16.09	11.71
Available phosphoric acid,	8.94	10.20	--------	15.30	10.09
Insoluble phosphoric acid,	1.43	1.69	--------	0.79	1.62
Potash,	1.28	--------	--------	--------	1.59
Mechanical analysis of bone:					
Fine,	--------	--------	61.00	--------	--------
Coarse,	--------	--------	39.00	--------	--------
Selling price,	$30.26	$27.34	$43.58	$20.68	$27.50

The average content of nitrogen in the Complete and Nitrogen and Phosphoric Acid Fertilizers was .6 per cent. less than the averages noted in the samples representing these classes selected during the Spring inspection and in the case of the Complete Fertilizers, where lower guarantees for potash prevailed, there was only a decrease of 10 per cent. in this constituent. The most noticeable difference in the averages occurs in the case of selling prices which exceed those of the previous season from $1.80 to $4.78 a ton. Comparing these figures with those obtained during the Fall season of 1916, the brands sold during this season averaged from $2.22 to $6.13 a ton higher. The average price for each group of fertilizers for the Fall season of 1916, Spring season of 1917 and for this season are respectively as follows: Complete Fertilizers $24.97, $28.33 $30.26; Nitrogen and Phosphoric Acid Fertilizers $21.79, $23.93, $27.34; Ground Bone Fertilizers $37.45, $38.80, $43.58; Acidulated Phosphate Rock Fertilizers $18.46, $17.56, $20.68; Rock and Potash Fertilizers $21.62, $25.70, $27.50.

KEY TO TABLES.

All samples analyzed were given a chemist's number as shown in the extreme left and right hand columns.

Samples analyzed are grouped in alphabetical order of manufacturers' names and in these groupings brand names are shown in the same order.

The asterisk (*) indicates the cases where total nitrogen, available phosphoric acid and total potash are deficient to the extent of .2 per cent. or more below their respective guarantees. In cases where the guarantees are .5 per cent. or less the deficiencies noted are where the amount is .1 per cent. or more below the guarantees.

Order of results of analysis: Moisture, Total Nitrogen found and guaranteed, Total Phosphoric Acid found and guaranteed; Available Phosphoric Acid found and guaranteed; Insoluble Phosphoric Acid found and guaranteed; Total Potash found and guaranteed. The Potash is shown as Muriate in the columns and those cases where Potash is present in part or in whole as Sulphate, a dagger at the bottom of the page shows the percentages of Potash in these forms.

To determine the formula of any brand, as guaranteed, multiply Total Nitrogen guaranteed by 1.2158 to obtain Ammonia and then use this figure and the guarantees for Available Phosphoric Acid and Total Potash. For example, Nitrogen guarantee equals .82% (.82x-1.2158=1%.) Ammonia equals 1% Available Phosphoric Acid 8% Potash 1%. Formula therefore is 1-8-1.

Complete Fertilizers, Table I, furnishing Nitrogen, Phosphoric Acid and Potash.

Nitrogen and Phosphoric Acid Fertilizers, Table II, including Dissolved Bones and other like products.

Ground Bone Fertilizers, Table III, furnishing Nitrogen and Phosphoric Acid.

Acidulated Phosphate Fertilizers, Table IV, furnishing Phosphoric Acid.

Rock and Potash Fertilizers, Table V, furnishing Phosphoric Acid and Potash.

Miscellaneous Fertilizers, Table VI, including "Phospho Plaster," Pulverized Untreated Phosphate Rock, Bone and Tankage and Dried Ground Blood.

TABLE NO. I.—

Furnishing Nitrogen,

Chemist's number.	Name of Manufacturer and Brand.	Sample Taken From—
	THE AMERICAN AGRICULTURAL CHEMICAL COMPANY, NEW YORK, N. Y.	
2844	Bradley's B. D. Sea Fowl Guano, 1916,	J. A. McKelvey, Blairsville,
3084	Bradley's B. D. Sea Fowl Guano, 1916,	Schultz & Pardoe, Franklin,
3104	Bradley's Niagara Phosphate,	Anderson Hardware Co., New Bethlehem,
2860	Bradley's Niagara Phosphate,	A. Krause & Son, Marwood,
3043	Crocker's Universal Grain Grower, 1916,	Houck & Henry, New Berlinville,
2926	Dead Shot Phosphate, 1916,	Elias Hornburger, Ephrata,
2807	Detrick's Imperial Compound, 1916,	D. E. Miller, Mifflinburg,
2852	Detrick's Kangaroo Komplete Kompound, 1916.	Gelbach & Behm, Evans City,
3109	Detrick's Kangaroo Komplete Kompound, 1916.	Harvey S. Yoder, Grantsville,
3012	Eagle Phosphate,	J. W. Craft, Ambler,
3040	Eagle Phosphate,	A. D. Trexler's Sons, Trexler,
2994	Great Eastern General, 1916,	Estate of George S. Snyder, Hatfield,
3090	Milsom's Special Buffalo Guano,	S. F. McQuiston, Meadville,
2708	Moro-Phillips C. & G. Complete Fertilizer, 1916.	I. J. Tustin Estate, Phoenixville,
2761	Moro-Phillips C. & G. Complete Fertilizer, 1916.	George Donkle, Myerstown,
2928	Moro-Phillips C. & G. Complete Fertilizer, 1916.	Elias Hornberger, Ephrata,
2772	Packers' Union Universal Fertilizer, 1916,	A. F. Breidigam, New Jerusalem,
2989	Packers' Union Universal Fertilizer, 1916,	F. F. Hoffman Estate, Sadsburyville,
2958	Reese's Ammoniated Phosphate Mixture, 1916.	J. F. Goodling, Loganville,
2726	Reese's Challenge Crop Grower, 1916,	W. H. Schmuck, Red Lion,
2739	Reese's Half and Half No. 1,	Milton Neuman, Dover,
2725	Reese's Half and Half No. 1,	S. P. Overdorff, Windsor,
2714	Reese's Harvest Queen, 1916,	Clayton Evans & Bro., Glen Moore,
2713	Reese's Mayflower, 1916,	Clayton Evans & Bro., Glen Moore,
2808	Wheat, Corn and Grass Fertilizer,	D. E. Miller, Mifflinburg,
3039	Wheat, Corn and Grass Fertilizer,	A. D. Trexler's Sons, Trexler,
3154	Wheeler's Royal Wheat Grower, 1916,	Clinton Brader, Bethlehem,
2929	Wheeler's Royal Wheat Grower, 1916,	John S. Enck, Stevens,
2977	Zell's Economizer Phosphate, 1916,	Ewing & Kinsloe, Newton Hamilton,
	BALTIMORE FERTILIZER CO., BALTIMORE, MD.	
2731	Honest Tankage Rock and Potash,	J. W. Seifert, Dillsburg,
2899	Old Honesty,	E. D. Brant, East Berlin,
	BALTIMORE PULVERIZING CO., BALTIMORE, MD.	
2744	Penniman Special Guano,	M. J. Sheffer, Hanover,

COMPLETE FERTILIZERS.

Phosphoric Acid and Potash.

Moisture.	NITROGEN.		PHOSPHORIC ACID.						POTASH.		Selling price per ton at place of selection.	Chemist's number.
			Total.		Available.		Insoluble.					
	Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.		
%	%	%	%	%	%	%	%	%	%	%	$	
3.88	1.13	0.82	13.07	11.00	10.97	10.00	2.10	1.00	†1.06	1.00	32 00	2844
4.40	0.93	0.82	13.02	11.00	11.68	10.00	1.34	1.00	†1.44	1.00	40 00	3084
1.91	0.84	0.82	8.52	8.00	7.12	7.00	1.40	1.00	†1.54	1.00	32 00	3104
3.18	0.94	0.82	9.25	8.00	7.53	7.00	1.72	1.00	1.26	1.00	32 00	2860
4.02	1.23	0.82	8.73	9.00	8.09	8.00	0.64	1.00	†1.62	1.00	30 00	3043
2.73	0.71	0.41	10.00	9.00	8.72	8.00	1.28	1.00	1.64	1.00	25 50	2926
7.14	0.97	0.82	11.99	11.00	10.71	10.00	1.28	1.00	*0.58	1.00	29 00	2807
3.14	1.67	1.65	12.56	11.00	10.46	10.00	2.10	1.00	1.24	1.00	37 00	2852
4.83	1.75	1.65	12.04	11.00	10.13	10.90	1.91	1.00	†1.56	1.00	36 30	3109
3.65	1.18	0.82	8.93	8.00	7.85	7.00	1.08	1.00	1.30	1.00	35 00	3012
2.75	0.93	0.82	8.43	8.00	7.35	7.00	1.08	1.00	†1.38	1.00	29 50	3040
2.55	0.90	0.82	9.10	9.00	8.46	8.00	0.64	1.00	†1.32	1.00	30 00	2994
6.44	0.79	0.82	12.86	11.00	11.39	10.00	1.47	1.00	†1.78	1.00	31 50	3090
5.59	0.92	0.82	9.89	9.00	8.87	8.00	1.02	1.00	†1.58	1.00	35 00	2708
5.31	0.99	0.82	9.76	9.00	8.55	8.00	1.21	1.00	1.44	1.00	32 00	2761
3.30	0.98	0.82	9.81	9.00	8.60	8.00	1.21	1.00	1.60	1.00	28 00	2928
4.69	0.86	0.82	8.99	9.00	8.10	8.00	0.89	1.00	1.50	1.00	--------	2772
3.78	1.30	0.82	9.32	9.00	8.75	8.00	0.57	1.00	†1.06	1.00	26 00	2989
5.31	0.99	0.82	11.57	11.00	10.29	10.00	1.28	1.00	1.00	1.00	29 00	2958
7.72	0.91	0.82	10.08	9.00	8.87	8.00	1.21	1.00	1.34	1.00	26 00	2726
4.78	1.00	0.82	8.99	8.00	7.97	7.00	1.02	1.00	1.04	1.00	29 00	2739
4.73	1.02	0.82	9.76	8.00	8.55	7.00	1.21	1.00	1.56	1.00	25 50	2725
3.64	1.39	1.23	10.51	11.00	*9.49	10.00	1.02	1.00	1.48	1.00	31 50	2714
3.88	1.79	1.65	10.59	10.00	*8.36	9.00	2.23	1.00	1.04	1.00	35 00	2713
5.45	1.08	0.82	10.97	10.00	9.69	9.00	1.28	1.00	1.42	1.00	26 50	2808
4.62	0.99	0.82	10.87	10.00	9.72	9.00	1.15	1.00	†1.44	1.00	30 50	3039
4.98	0.70	0.82	9.48	9.00	8.71	8.00	0.77	1.00	†1.50	1.00	29 00	3154
2.77	0.85	0.82	9.17	9.00	7.89	8.00	1.28	1.00	1.46	1.00	--------	2929
5.76	0.83	0.82	9.94	9.00	8.73	8.00	1.21	1.00	†1.04	1.00	30 75	2977
2.21	0.68	0.40	10.84	8.00	8.23	7.00	2.61	1.00	†0.42	0.25	22 50	2731
2.01	1.13	0.80	12.23	9.00	9.36	8.00	2.87	1.00	†0.80	0.25	--------	2899
5.39	1.06	0.82	7.76	--------	*6.74	8.00	1.02	--------	1.32	1.00	27 00	2744

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*Deficient.
†No. 2844 as muriate, 0.33%; as sulphate, 0.73%.
†No. 3084 as muriate, 0.28%; as sulphate, 1.16%.
†No. 3104 as muriate, 0.60%; as sulphate, 0.94%.
†No. 3043 as muriate, 0.70%; as sulphate, 0.92%.
†No. 3109 as muriate, 1.13%; as sulphate, 0.43%.
†No. 3040 as muriate, 0.58%; as sulphate, 0.80%.
†No. 2994 as muriate, 0.60%; as sulphate, 0.72%.
†No. 3090 as muriate, 0.41%; as sulphate, 1.37%.
†No. 2708 as muriate, 0.84%; as sulphate, 0.74%.
†No. 2989 as muriate, 0.57%; as sulphate, 0.49%.
†No. 3039 as muriate, 0.62%; as sulphate, 0.82%.
†No. 3154 as muriate, 0.64%; as sulphate, 0.86%.
†No. 2977 as muriate, 0.55%; as sulphate, 0.49%.
†No. 2731 as muriate, 0.26%; as sulphate, 0.16%.
†No. 2899 as muriate, 0.45%; as sulphate, 0.35%.

Chemist's number.	Name of Manufacturer and Brand.	Sample Taken From—
	BAUGH & SONS COMPANY, PHILADELPHIA, PA.	
2839	Baugh's General Crop Grower: For all Crops.	H. F. Kistler, Wanamakers,
2936	Baugh's General Crop Grower: For all Crops.	D. M. Wertz & Co., Quincy,
	BOWKER FERTILIZER CO., NEW YORK, N. Y.	
2710	Bowker's Farm and Garden Phosphate, 1916.	Harvey L. Moses, Chester Springs,
	THE CENTRAL CHEMICAL CO., HAGERSTOWN, MD.	
2832	C. C. C. Fish Bone and Potash,	Oliver Delong, Slatington,
3031	C. C. C. Fish Bone and Potash,	John W. Kline, Catawissa,
2780	C. C. C. Fish Bone and Potash,	S. K. Savidge, Valley View,
2969	C. C. C. Golden Sheaf,	John Dunn, McCalisterville,
	THE COE-MORTIMER COMPANY, NEW YORK, N. Y.	
2794	E. Frank Coe's Penna. No. 1 Grain Special, 1916.	J. H. Ross, Linden Hall,
2912	E. Frank Coe's Penna. No. 1 Grain Special, 1916.	The I. W. Scott Co., Pittsburgh,
2788	E. Frank Coe's Penna. No. 1 Grain Special, 1916.	M. C. Zellner, Lehighton,
3152	E. Frank Coe's Universal Fertilizer, 1916,	August Bathman, Dublin,
	THE CONSUMERS CHEMICAL CORPORATION, NEW YORK, N. Y.	
3155	Consumers' Pure-Sure Plant Food,	Clinton Brader, Bethlehem,
	JOSIAH COPE & COMPANY, BALTIMORE, MD.	
3001	Wheat and Grass Special,	F. E. Bailey, Northbrook,
2690	Wheat and Grass Special,	Jones Evanson, Christiana,
	DUBOIS FERTILIZER WORKS, INC., DUBOIS, PA.	
3117	Grain Grower, 1917,	E. B. Maurer, Boswell,
2810	Swack's 1-6-2, 1917,	Peter Hause, New Columbia,
	EUREKA CHEMICAL COMPANY, BALTIMORE, MD.	
2753	Eureka Grain and Grass,	Morris Bordner, Bethel,
2812	Eureka Grain and Grass,	Milton Catherman, Mifflinburg,
2886	Eureka Grain and Grass,	Ellis Swartz, Littlestown,
	GRIFFITH & BOYD COMPANY, BALTIMORE, MD.	
2811	Ammoniated Bone Phosphate,	Adam Krug, Allenwood,
2922	Fish Bone and Potash,	C. E. Brackbill, Gap,
2890	Fish Bone and Potash,	Ruben Schwartz, Gettysburg,
2854	Harvest Queen Phosphate,	Harmony Cereal Mills, Harmony,

FERTILIZERS.—Continued.

Moisture.	NITROGEN.		PHOSPHORIC ACID.						POTASH.		Selling price per ton at place of selection.	Chemist's number.
			Total.		Available.		Insoluble.					
	Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.		
%	%	%	%	%	%	%	%	%	%	%	$	
5.24	1.05	0.82	9.31	--------	8.29	8.00	1.02	--------	0.82	1.00	28 50	2839
8.02	1.01	0.82	10.49	--------	8.38	8.00	2.10	--------	1.20	1.00	28 50	2936
5.41	1.92	1.65	10.65	11.00	*9.76	10.00	0.89	1.00	1.60	1.00	36 00	2710
4.08	1.09	1.04	8.79	--------	7.83	8.00	0.96	--------	0.98	1.00	--------	2832
3.84	1.07	1.04	9.25	--------	8.17	8.00	1.08	--------	1.16	1.00	30 30	3031
4.57	1.03	1.04	9.31	--------	8.21	8.00	1.10	--------	1.78	1.00	32 00	2780
3.89	1.13	0.82	10.28	--------	9.32	8.00	0.96	--------	1.02	1.00	--------	2969
5.58	0.89	0.82	11.93	11.00	10.34	10.00	1.59	1.00	1.62	1.00	30 00	2794
5.68	0.97	0.82	12.91	11.00	11.70	10.00	1.21	1.00	†1.14	1.00	36 00	2912
7.13	0.90	0.82	12.50	11.00	11.07	10.00	1.43	1.00	†1.06	1.00	27 00	2788
2.82	1.98	1.65	12.63	10.00	10.91	9.60	1.72	1.00	†1.46	1.00	36 00	3152
2.56	0.98	0.82	10.77	9.00	9.21	8.00	1.56	1.00	†1.68	1.00	29 00	3155
2.97	0.96	0.82	9.49	9.00	8.21	8.00	1.28	1.00	†1.10	1.00	30 00	3001
2.82	1.11	0.82	9.44	9.00	8.93	8.00	0.51	1.00	†1.20	1.00	28 50	2690
3.22	0.80	0.85	8.53	8.00	7.76	7.00	0.77	1.00	†1.42	1.00	30 00	3117
2.93	0.91	0.85	7.08	7.00	6.12	6.00	0.96	1.00	†2.66	2.00	35 00	2810
2.89	1.13	0.82	7.65	7.50	6.82	7.00	0.83	0.50	0.50	0.50	--------	2753
5.30	0.87	0.82	9.25	7.50	7.78	7.00	1.47	0.50	0.54	0.50	26 00	2812
2.90	0.94	0.82	8.61	7.50	7.59	7.00	1.02	0.50	†0.74	0.50	--------	2886
5.97	1.62	1.65	10.91	9.00	8.77	8.00	2.14	1.00	2.37	1.00	--------	2811
3.59	*1.26	1.50	9.96	8.00	7.63	7.00	2.33	1.00	†1.22	1.00	33 00	2922
3.27	*1.29	1.50	9.77	8.00	7.03	7.00	2.74	1.00	†1.06	1.00	31 85	2890
5.50	0.91	0.85	11.08	10.00	*8.72	9.00	2.36	1.00	†1.14	1.00	32 00	2854

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*Deficient.
†No. 2912 as muriate, 0.45%; as sulphate, 0.69%.
†No. 2788 as muriate, 0.44%; as sulphate, 0.62%.
†No. 3152 as muriate, 0.79%; as sulphate, 0.67%.
†No. 3155 as muriate, 0.43%; as sulphate, 1.25%.
†No. 3001 as muriate, 0.60%; as sulphate, 0.50%.
†No. 2690 as muriate, 0.63%; as sulphate, 0.57%.
†No. 3117 as muriate, 0.26%; as sulphate, 1.16%.
†No. 2810 as sulphate, 2.66%.
†No. 2886 as muriate, 0.36%; as sulphate, 0.38%.
†No. 2922 as muriate, 0.43%; as sulphate, 0.79%.
†No. 2890 as muriate, 0.43%; as sulphate, 0.63%.
†No. 2854 as sulphate, 1.14%.

TABLE I.—COMPLETE

Chemist's number.	Name of Manufacturer and Brand.	Sample Taken From—
2921	Peerless Fertilizer,	C. E. Brackbill, Gap,
2953	Peerless Fertilizer,	D. W. Gehley, York,
2889	Special Royal Guano,	Ruben Schwartz, Gettysburg,
	S. M. HESS & BROTHER, INC., PHILADELPHIA, PA.	
2756	Ammoniated Superphosphate, 1916,	G. W. Lightner, Myerstown,
2914	Ammoniated Superphosphate, 1916,	Ben Widner, Lititz,
3120	Wheat and Grass Manure, 1916,	George Wass, Addison,
3105	Wheat and Grass Manure, 1916,	Menno Yoder, Meyersdale,
	M. P. HUBBARD CO., INC., BALTIMORE, MD.	
3046	Hubbard's Good and Cheap,	L. A. Geiger, Joanna,
	KEYSTONE BONE FERTILIZER COMPANY, PHILADELPHIA, PA.	
2822	Keystone Grain and Grass Manure,	Charles Ebner, Easton,
	KOLLER FERTILIZER CO., SEITZLAND, PA.	
2948	Koller's Ammoniated Phosphate,	Summit Lumber Co., New Freedom,
	THE LANCASTER CHEMICAL CO., LANCASTER, PA.	
2694	No. 2 Dewey Brand,	H. M. Stauffer, Leola,
	LISTER'S AGRICULTURAL CHEMICAL WORKS, NEWARK, N. J.	
3014	Lister's Ammoniated Dissolved Superphosphate, 1916.	W. E. Ervin, Somerton,
2750	Lister's Ammoniated Dissolved Superphosphate, 1916.	J. M. Groh, Lickdale,
3057	Lister's Golden Sheaf, 1916,	Jacob Bowser, St. Clairsville,
2937	Lister's Golden Sheaf, 1916,	W. H. Fogelsonger, Shippensburg,
3131	Lister's Golden Sheaf, 1916,	B. F. Zimmerman, Ringtown,
2804	Lister's New York Special Fertilizer, 1916,	Charles Ruhl, Millmont,
2805	Lister's Special Wheat Fertilizer, 1916,	Charles Ruhl, Millmont,
2858	Lister's Squirrel Brand Fertilizer, 1916,	Morrow & Buxton, Valencia,
	THE MARTIN FERTILIZER CO., BALTIMORE, MD.	
3083	Martin's Corn and Cereal Special,	Wysox Produce Co., Wysox,
2777	Martin's Dissolved Organic Compound,	A. F. Kimmel, Orwigsburg,
2955	Martin's Dissolved Organic Compound,	A. L. Miller, York,
	THE MILLER FERTILIZER CO., BALTIMORE, MD.	
2742	Quarter Mixture,	H. E. Bair, Bairs,
2961	Quarter Mixture,	Francis Baker, Lewisburg,
3023	Quarter Mixture,	O. P. Bull, Hughesville,
2741	W. G. Phosphate,	J. E. Moul, Iron Ore,

FERTILIZERS.—Continued.

Moisture.	NITROGEN.		PHOSPHORIC ACID.						POTASH.		Selling price per ton at place of selection.	Chemist's number.
			Total.		Available.		Insoluble.					
	Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.		
%	%	%	%	%	%	%	%	%	%	%	$	
6.51	0.62	0.41	9.93	9.00	8.46	8.00	1.47	1.00	†1.56	1.00	26 00	2921
3.89	0.60	0.41	11.74	9.00	9.57	8.00	2.17	1.00	*0.72	1.00	18 00	2953
3.30	1.12	0.85	10.35	9.00	8.25	8.00	2.10	1.00	†1.10	1.00	27 85	2889
7.62	1.96	1.65	11.80	10.00	10.33	9.00	1.47	1.00	1.72	1.00	36 50	2756
3.60	1.82	1.65	10.61	10.00	9.08	9.00	1.53	1.00	0.90	1.00	33 00	2914
4.13	1.00	0.82	10.42	10.00	9.46	9.00	0.96	1.00	†1.16	1.00	33 00	3120
3.74	1.03	0.82	11.25	10.00	10.17	9.00	1.08	1.00	†1.56	1.00	27 60	3105
3.89	0.86	0.83	9.24	9.50	8.03	8.00	1.21	1.50	†1.70	1.00	--------	3046
5.10	1.26	0.82	9.31	8.00	7.84	7.00	1.47	1.00	1.04	1.00	--------	2822
6.75	0.77	0.82	11.30	8.50	8.81	8.00	2.49	0.50	0.92	1.00	21 75	2948
2.47	1.27	1.23	8.85	9.00	*7.06	8.00	1.79	1.00	1.52	1.00	33 00	2694
5.33	2.02	2.06	9.86	9.00	*7.63	8.00	2.23	1.00	1.70	1.00	40 00	3014
6.37	2.15	2.06	10.40	9.00	9.19	8.00	1.21	1.00	†1.00	1.00	38 00	2750
5.64	0.55	0.41	9.25	9.00	8.10	8.00	1.15	1.00	†1.34	1.00	25 00	3057
4.82	0.54	0.41	9.46	9.00	8.50	8.00	0.96	1.00	1.20	1.00	25 50	2937
4.76	0.58	0.41	9.20	9.00	8.45	8.00	0.75	1.00	†1.68	1.00	24 00	3131
4.63	1.67	1.65	10.72	10.00	9.19	9.00	1.53	1.00	†1.82	1.00	36 50	2804
5.37	*1.81	2.06	9.95	9.00	8.74	8.00	1.21	1.00	0.96	1.00	36 50	2805
6.62	1.02	0.82	10.91	9.00	9.79	8.00	1.12	1.00	1.14	1.00	31 00	2858
5.41	1.79	1.65	12.25	--------	8.93	8.00	3.32	--------	1.22	1.00	28 00	3083
4.64	1.10	1.03	13.01	--------	*8.48	9.00	4.53	--------	0.52	0.50	28 00	2777
2.27	1.26	1.03	11.02	--------	9.21	9.00	1.81	--------	0.54	0.50	29 00	2955
2.68	0.35	0.21	10.52	9.50	9.50	9.00	1.02	0.50	†0.36	0.25	--------	2742
2.43	0.54	0.21	10.64	9.50	9.43	9.00	1.21	0.50	0.32	0.25	23 00	2961
1.90	0.40	0.21	9.10	9.50	*8.08	9.00	1.02	0.50	†0.98	0.25	21 50	3023
2.26	0.60	0.41	8.61	7.50	7.65	7.00	0.96	0.50	1.04	0.50	22 00	2741

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*Deficient.
†No. 2921 as sulphate, 1.56%.
†No. 2889 as muriate, 0.45%; as sulphate, 0.65%.
†No. 3120 as muriate, 0.89%; as sulphate, 0.27%.
†No. 3105 as muriate, 0.93%; as sulphate, 0.63%.
†No. 3046 as muriate, 0.42%; as sulphate, 1.28%.
†No. 2750 as muriate, 0.58%; as sulphate, 0.42%.
†No. 3057 as muriate, 0.77%; as sulphate, 0.57%.
†No. 3131 as muriate, 0.69%; as sulphate, 0.99%.
†No. 2804 as muriate, 0.88%; as sulphate, 0.94%.
†No. 2742 as muriate, 0.20%; as sulphate, 0.16%.
†No. 3023 as muriate, 0.14%; as sulphate, 0.84%.

TABLE I.—COMPLETE

Chemist's number.	Name of Manufacturer and Brand.	Sample Taken From—
	NASSAU FERTILIZER CO., NEW YORK, N. Y.	
3144	Special Mixture, 1916,	John N. Landis, Quakertown,
	G. OBER & SONS COMPANY, BALTIMORE, MD.	
2759	Ober's Farmers' Mixture,	A. M. Brandt, Campbelltown,
2975	Ober's Independent Ammoniated Superphosphate.	Wm. M. Atkinson, McVeytown,
2891	Ober's Independent Ammoniated Superphosphate.	D. Blocher & Co., Gettysburg,
2974	Ober's Nitro Potash Compound,	Wm. M. Atkinson, McVeytown,
	J. D. PERKINS, COATESVILLE, PA.	
2701	Perkins' Special Bone Manure,	J. D. Perkins, Coatesville,
	PIEDMONT MT. AIRY GUANO CO., BALTIMORE, MD.	
3028	Levering's Excelsior,	N. G. Adams, Paxinos,
2888	Levering's Excelsior,	H. D. and J. F. Bream, Gettysburg,
	THE POLLOCK FERTILIZER CO., BALTIMORE, MD.	
3060	Ammoniated Superphosphate, 1916,	J. H. Scott, Petersburg,
	RASIN-MONUMENTAL COMPANY, BALTIMORE, MD.	
2981	Rasin's Empire Guano,	Oxford Grain & Hay Co., Oxford,
2970	Rasin's Wheat, Corn and Oats Mixture,	Walter Book, Port Royal,
	ROBERT A. REICHARD, ALLENTOWN, PA.	
2827	Surpass Phosphate,	William Mittman, Easton,
	THE SCOTT FERTILIZER COMPANY, ELKTON, MD.	
2924	Scott's Standard, 1917,	Wilmer Kershner, Witmer,
3047	Scott's Wheat and Grass, 1917,	Levi Beiler, Elverson,
2783	Scott's Wheat and Grass, 1917,	Nathan Bollinger, Little Gap,
2692	Scott's Wheat and Grass, 1917,	A. B. Groff, New Holland,
	THE SUPERIOR GUANO COMPANY, BALTIMORE, MD.	
3113	Pennsylvania Leader,	C. H. Schmucker, Friedens,
	SWIFT & COMPANY, INC., BALTIMORE, MD.	
2964	Grain and Grass Grower,	W. B. Winey, Middleburg,
3111	Reliable Grain Fertilizer,	Jeff Altfather, Berlin,
	I. P. THOMAS & SON CO., PHILADELPHIA, PA.	
2984	Victor Potash Fertilizer,	James K. Lewis, Honeybrook,

FERTILIZERS.—Continued.

	NITROGEN.		PHOSPHORIC ACID.						POTASH.			
			Total.		Available.		Insoluble.					
Moisture.	Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.	Selling price per ton at place of selection.	Chemist's number.
%	%	%	%	%	%	%	%	%	%	%	$	
3.27	1.08	0.82	12.16	11.00	10.83	10.00	1.33	1.00	†1.70	1.00	--------	3144
3.68	1.04	0.82	13.07	10.00	11.16	9.00	1.91	1.00	2.32	2.00	34 40	2759
3.88	1.04	0.82	10.19	9.00	8.02	8.00	2.17	1.00	1.12	1.00	32 00	2975
2.57	0.86	0.82	9.96	9.00	8.05	8.00	1.91	1.00	0.98	1.00	29 00	2891
3.61	1.60	1.65	11.99	10.00	9.50	9.00	2.49	1.00	†1.08	1.00	36 50	2974
4.13	1.21	0.82	9.63	9.00	8.86	8.00	0.77	1.00	1.76	1.00	--------	2701
3.76	0.99	0.82	9.39	--------	8.75	8.00	0.64	--------	†1.52	1.00	30 00	3028
2.62	1.23	0.82	10.26	--------	8.67	8.00	1.59	--------	†1.70	1.00	35 00	2888
4.54	1.72	1.65	10.54	10.00	8.82	9.00	1.72	1.00	†1.48	1.00	28 00	3060
3.41	1.97	1.65	10.01	9.00	8.42	8.00	1.59	1.00	†2.06	2.00	35 00	2981
6.23	0.66	0.41	10.08	9.00	8.80	8.00	1.28	1.00	2.02	2.00	32 00	2970
3.88	2.10	1.64	9.27	9.00	*7.80	8.00	1.47	1.00	†2.18	2.00	40 00	2827
4.23	1.11	0.83	10.93	10.00	8.95	8.00	1.98	2.00	†1.12	1.00	29 50	2924
8.48	0.89	0.42	13.71	12.00	11.86	10.00	1.85	2.00	†2.12	1.00	24 00	3047
7.31	0.91	0.42	13.90	12.00	12.02	10.00	1.88	2.00	†0.98	1.00	--------	2783
6.26	0.65	0.42	12.25	12.00	11.10	10.00	1.15	2.00	†1.14	1.00	--------	2602
2.00	0.42	0.41	10.13	9.00	*7.72	8.00	2.41	1.00	†1.14	0.50	24 00	3113
3.79	0.89	0.82	8.36	--------	*8.00	9.00	0.36	--------	1.60	1.00	33 00	2964
2.28	1.04	0.82	10.15	--------	9.32	8.00	0.83	--------	1.10	1.00	32 50	3111
9.50	0.86	0.82	14.01	12.50	12.10	12.00	1.91	0.50	1.08	1.00	31 00	2984

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*Deficient.
†No. 3144 as muriate, 0.65%; as sulphate, 1.05%.
†No. 2974 as muriate, 0.62%; as sulphate, 0.46%.
†No. 3028 as sulphate, 1.52%.
†No. 2888 as sulphate, 1.70%.
†No. 3060 as muriate, 0.85%; as sulphate, 0.63%.
†No. 2981 as muriate, 0.64%; as sulphate, 1.42%.
†No. 2827 as sulphate, 2.18%.
†No. 2924 as muriate, 0.49%; as sulphate, 0.63%.
†No. 3047 as muriate, 0.60%; as sulphate, 1.52%.
†No. 2783 as muriate, 0.53%; as sulphate, 0.45%.
†No. 2692 as sulphate, 1.14%.
†No. 3113 as muriate, 0.30%; as sulphate, 0.84%.

TABLE I.—COMPLETE

Chemist's number.	Name of Manufacturer and Brand.	Sample Taken From—
	THE J. E. TYGERT COMPANY, PHILADELPHIA, PA.	
2752	Golden Harvest Phosphate, 1916,	Emanuel Merkey, Bethel,
	W. E. WHANN CO., PHILADELPHIA, PA.	
2770	Whann's Chester Valley Available Ammoniated Superphosphate, 1916.	James A. Yeager, Hamburg,
2771	Whann's Chester Valley Special Ammoniated Superphosphate, 1916.	James A. Yeager, Hamburg,
	THE ROBERT A. WOOLDRIDGE COMPANY, BALTIMORE, MD.	
2787	Wooldridge's Champion Stag Phosphate, 1916.	John Loch, Sittlers,
3036	Wooldridge's Champion Stag Phosphate, 1916.	John Wenger, Annville,
	THE WOOLDRIDGE FERTILIZER COMPANY, BALTIMORE, MD.	
2874	Clover Leaf Crop Grower,	Grant Johnson, Millville,
2697	Old Hickory Phosphate,	M. B. Hacker, Lincoln,
2696	Tiger Phosphate,	M. B. Hacker, Lincoln,
		Average,

FERTILIZERS—Concluded.

	NITROGEN.		PHOSPHORIC ACID.						POTASH.			
			Total.		Available.		Insoluble.					
Moisture.	Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.	Selling price per ton at place of selection.	Chemist's number.
%	%	%	%	%	%	%	%	%	%	%	$	
3.42	0.93	0.82	10.08	9.00	8.87	8.00	1.21	1.00	1.58	1.00	-------	2752
5.38	1.13	0.82	12.31	11.00	10.97	10.00	1.34	1.00	1.94	1.00	29 00	2770
4.31	0.86	0.82	9.06	9.00	8.00	8.00	1.06	1.00	0.90	1.00	28 00	2771
4.39	1.08	0.82	10.52	10.00	9.16	9.00	1.36	1.00	†0.98	1.00	30 00	2787
3.89	0.92	0.82	10.29	10.00	9.31	9.00	0.98	1.00	†1.44	1.00	30 25	3036
6.36	0.56	0.42	9.35	8.50	8.33	8.00	1.02	0.50	0.74	0.50	24 00	2874
6.02	1.17	0.83	10.14	8.50	9.37	8.00	0.77	0.50	0.60	0.50	27 50	2697
5.39	1.49	1.03	9.69	8.50	8.86	8.00	0.83	0.50	†0.72	0.50	29 00	2696
4.41	1.09	------	10.37	--------	8.94	--------	1.43	--------	1.28	--------	30 26	--------

†No. 2787 as muriate, 0.64%; as sulphate, 0.34%.
†No. 3036 as muriate, 0.66%; as sulphate, 0.78%.
†No. 2696 as muriate, 0.49%; as sulphate, 0.23%.

TABLE NO. II.—NITROGEN AND
Including Dissolved Bones

Chemist's number.	Name of Manufacturer and Brand.	Sample Taken From—
	ACTIVE CHEMICAL CO., CAMDEN, N.J.	
2671	Semper All Crop,	Albert Herr, Quarryville,
2672	Semper Corn Grower,	Albert Herr, Quarryville,
2673	Semper Potato King,	Albert Herr, Quarryville,
	THE ALLENTOWN MANUFACTURING CO., ALLENTOWN, PA.	
2838	Quick Return Phosphate,	Mr. Fenstimaker, Allentown,
2835	Special Complete Phosphate,	Mr. Fenstimaker, Allentown,
	THE AMERICAN AGRICULTURAL CHEMICAL COMPANY, NEW YORK, N. Y.	
3149	Ammoniated Fertilizer A,	W. S. Sassaman, Ottsville,
3016	Diamond Wheat & Grass Special,	A. H. Keeley & Sons, Schwenksville,
2806	Diamond Wheat & Grass Special,	D. E. Miller, Mifflinburg,
3133	Diamond Wheat & Grass Special,	S. Ellsworth Schwalm, Valley View,
2927	Soluble Grain Mixture,	Elias Hornburger, Ephrata,
2709	Soluble Grain Mixture,	I. J. Tustin Estate, Phoenixville,
2871	Southern Fertilizing Co's Br.: Ajax Phosphate.	J. G. Rishel, Jerseytown,
3017	Susquehanna Arrow Brand,	A. H. Keeley & Sons, Schwenksville,
2699	XXX Ammoniated Fertilizer,	Edward Brinton & Sons, West Chester,
	AMERICAN FERTILIZING COMPANY, BALTIMORE, MD.	
2906	American Grain & Grass Superphosphate,	Burt Hoff, Seven Valleys,
2815	American Special Fish Guano,	Wm. Brouse, Kratzerville,
2923	American Special Fish Guano,	E. E. Carnagy, Vintage,
3112	American Special Fish Guano,	John G. Emert, Somerset,
	ARMOUR FERTILIZER WORKS, INC., BALTIMORE, MD.	
2790	Armour's 1½-9-0,	A. H. Haas, Lehighton,
2935	Armour's 3-10-0,	D. M. Wertz & Co., Quincy,
	BALTIMORE PULVERIZING CO., BALTIMORE, MD.	
2900	High Grade Wheat,	M. J. Sheffer, Hanover,
2887	Practical Fertilizer,	A. P. Lippy & Son, Littlestown,
	BAUGH & SONS COMPANY, PHILADELPHIA, PA.	
2837	Baughs The Old Stand-By Dissolved Animal Base.	Bitner Bros. & Co., Jordan,
3128	Baugh's The Old Stand-By Dissolved Animal Base.	Thomas Garrison, Berwick,
2983	Baugh's Truckers Favorite,	E. H. Keen & Co., Parkesburg,
2730	Baugh's Wheat Fertilizer,	Cook Grain, Feed & Supply Co., Dillsburg,
2856	Baugh's Wheat Fertilizer,	O. W. Luck, Zelienople,
3140	Baugh's Wheat Fertilizer,	S. K. Moore, Coopersburg,
	THE BERG COMPANY, PHILADELPHIA, PA.	
2993	Berg's Special Bone Manure,	Edward F. Bracken, Paoli,
	BERGER BROTHERS, EASTON, PA.	
3157	Peerless Phosphate Revised,	Oliver Himer, Nazareth,
	BOWKER FERTILIZER CO., NEW YORK, N. Y.	
3130	Bowker's Superphosphate with Ammonia 1%.	Michael Harten, Nescopeck,

PHOSPHORIC ACID FERTILIZERS.
and Other Like Products.

	NITROGEN.		PHOSPHORIC ACID.							
			Total.		Available.		Insoluble.			
Moisture.	Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.	Selling price per ton at place of selection.	Chemist's number.
%	%	%	%	%	%	%	%	%	$	
5.13	1.64	1.64	8.61	----------	8.16	8.00	0.45	--------	25 00	2671
7.31	0.86	0.82	10.78	----------	10.52	10.00	0.26	--------	22 50	2672
7.01	1.74	1.64	10.84	----------	10.65	10.00	0.18	--------	27 50	2673
6.26	1.08	1.03	12.63	----------	10.67	10.00	1.96	--------	28 00	2838
6.62	2.28	2.25	11.35	----------	7.65	5.00	3.70	5.00	--------	2835
4.61	1.16	0.82	11.58	11.00	10.81	10.00	0.77	1.00	25 00	3149
4.47	1.55	1.23	11.52	11.00	10.44	10.00	1.08	1.00	28 00	3016
5.65	1.58	1.23	11.74	11.00	10.12	10.00	1.62	1.00	24 00	2806
5.18	1.48	1.23	11.33	11.00	10.27	10.00	1.06	1.00	--------	3133
3.50	0.93	0.82	11.08	9.00	10.35	8.00	0.73	1.00	22 75	2927
3.82	1.02	0.82	9.82	9.00	9.12	8.00	0.70	1.00	30 00	2709
2.31	1.73	1.65	11.99	11.00	10.27	10.00	1.72	1.00	21 50	2871
4.15	1.05	0.82	9.67	9.00	8.78	8.00	0.89	1.00	24 00	3017
5.57	1.74	1.23	12.56	11.00	11.09	10.00	1.47	1.00	28 00	2699
5.01	1.06	0.82	12.05	10.00	9.91	9.00	2.14	1.00	25 00	2906
2.10	0.91	0.82	12.25	11.00	10.08	10.00	2.17	1.00	22 00	2815
3.58	0.81	0.82	13.33	11.00	10.14	10.00	3.19	1.00	23 25	2923
2.10	0.90	0.82	12.26	11.00	*9.71	10.00	2.55	1.00	26 00	3112
4.96	1.34	1.23	10.52	9.50	9.18	9.00	1.34	0.50	--------	2790
7.30	*2.15	2.47	11.34	10.50	10.31	10.00	1.03	0.50	--------	2935
3.71	1.97	1.64	9.98	----------	*8.61	10.00	1.37	--------	29 50	2900
2.17	0.70	0.82	9.82	----------	8.35	8.00	1.47	--------	24 50	2887
6.65	1.70	1.65	14.61	----------	12.82	12.00	1.79	--------	30 00	2837
4.81	1.83	1.65	15.32	----------	13.50	12.00	1.82	--------	32 00	3128
8.35	2.55	2.47	11.99	----------	10.78	10.00	1.21	--------	35 50	2983
7.60	1.68	1.65	12.69	----------	10.78	10.00	1.91	--------	31 00	2730
5.57	2.02	1.65	13.71	----------	11.22	10.00	2.49	--------	31 00	2856
8.84	1.75	1.65	12.35	----------	10.65	10.00	1.70	--------	31 00	3140
2.34	2.11	2.00	13.84	----------	10.33	7.00	3.51	--------	36 00	2993
2.85	1.11	0.82	10.18	9.00	8.78	8.00	1.40	1.00	32 00	3157
4.06	1.05	0.82	12.05	11.00	10.39	10.00	1.63	1.00	23 00	3130

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*Deficient.

TABLE 11.—NITROGEN AND PHOS

Chemist's number.	Name of Manufacturer and Brand.	Sample Taken From—
	THE CENTRAL CHEMICAL CO., HAGERSTOWN, MD.	
3108	CCC Bone Compound,	Lloyd Hay, Meyersdale,
2968	CCC Pride of the Valley,	John Dunn, McCalisterville,
3066	CCC Pride of the Valley,	J. A. Wetherspoon, Mercersburg,
2833	CCC Special Bone Mixture,	Oliver Delong, Slatington,
	THE CHESAPEAKE CHEMICAL CO., BALTIMORE, MD.	
3034	C. C. Co's Buyers Favorite,	Simon Carl, Numidia,
	THE COE-MORTIMER COMPANY, NEW YORK, N. Y.	
2861	E. Frank Coe's Famous Prize Brand Grain & Grass Fertilizer, 1916.	Adolph Boettinger, Danville,
3124	E. Frank Coe's Famous Prize Brand Grain & Grass Fertilizer, 1916.	J. G. Cover, Masontown,
3135	E. Frank Coe's Famous Prize Brand Grain & Grass Fertilizer, 1916.	Howard Hortman, Lynnport,
2781	E. Frank Coe's Grain Grower, 1916,	Harry Hebberling Tower City,
2845	E. Frank Coe's Grain Grower, 1916,	George J. New, Blairsville,
2915	E. Frank Coe's Grain Grower, 1916,	J. H. Reitz, Millway,
2934	E. Frank Coe's XXV Ammoniated Phosphate, 1916.	D. M. Wertz & Co., Quincy,
	COLUMBIA GUANO COMPANY, BALTIMORE, MD.	
3029	Columbia Grain & Grass Special,	M. P. Whitenight, Bloomsburg,
2831	Columbia Reflex Ammoniated Superphosphate.	Thomas Kunkel, Easton,
	THE CONSUMERS CHEMICAL CORPORATION, NEW YORK, N. Y.	
2784	Consumer's All Crop Compound (without Potash).	David Green, Little Gap,
2980	Consumer's All Crop Compound (without Potash).	John D. Greybill, Belleville,
2825	Consumers' Pure-Sure Ammoniated Bone Phosphate.	Titus Bachman, Hellertown,
	JOSIAH COPE & COMPANY, BALTIMORE, MD.	
3015	Ammoniated Fertilizer "A,"	A. H. Keeley & Sons, Schwenksville,
3002	Fish Guano,	F. E. Bailey, Northbrook,
	THE JAMES G. DOWNWARD CO., COATESVILLE, PA.	
2990	Ammoniated Phosphate,	M. S. Bailey, Malvern,
	DUBOIS FERTILIZER WORKS, INC., DUBOIS, PA.	
2978	DuBois Grain & Corn Fertilizer, 1917,	H. E. Lutz, Newton Hamilton,
	AMOS EBY & CO., LEAMAN PLACE, PA.	
2689	Pequea Ammoniated,	S. Clayton Rauch, Leaman Place,
2688	Pequea Economy,	S. Clayton Rauch, Leaman Place,
	EUREKA CHEMICAL COMPANY, BALTIMORE, MD.	
2813	Eureka Dissolved Animal Base,	Milton Catherman, Mifflinburg,
3125	Eureka Dissolved Animal Base,	C. C. Davis, Greensboro,
2754	Eureka Economy,	Morris Bordner, Bethel,
2746	Eureka Economy,	N. E. Gobrecht & Bro., Hanover,
3064	Eureka Economy,	H. E. Huston, Saltillo,

PHORIC ACID FERTILIZERS.—Continued.

	NITROGEN.		PHOSPHORIC ACID.							
			Total.		Available.		Insoluble.			
Moisture.	Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.	Selling price per ton at place of selection.	Chemist's number.
%	%	%	%	%	%	%	%	%	$	
6.06	1.28	1.25	15.84	----------	14.35	14.00	1.49	--------	--------	3108
3.68	0.84	0.82	10.70	----------	10.13	10.00	0.57	--------	--------	2968
3.84	0.87	0.82	11.47	----------	10.07	10.00	1.40	--------	25 00	3066
8.31	1.53	1.65	11.16	----------	10.52	10.00	0.64	--------	--------	2833
4.56	1.23	0.82	12.76	11.00	10.85	10.00	1.91	1.00	25 00	3034
3.68	0.87	0.82	10.72	9.00	9.76	8.00	0.96	1.00	26 00	2861
4.55	1.05	0.82	11.66	9.00	10.49	8.00	1.17	1.00	26 00	3124
1.85	1.14	0.82	10.01	9.00	8.44	8.00	1.57	1.00	--------	3135
3.56	1.52	1.65	9.18	9.00	8.35	8.00	0.83	1.00	28 25	2781
3.45	1.63	1.65	9.63	9.00	8.29	8.00	1.34	1.00	35 00	2845
1.35	1.57	1.65	9.87	9.00	8.34	8.00	1.53	1.00	30 00	2915
4.08	1.24	0.82	12.45	11.00	10.83	10.00	1.62	1.00	--------	2934
3.75	1.23	0.82	9.86	8.50	8.39	8.00	1.47	0.50	24 00	3029
4.41	1.01	0.82	12.12	10.50	10.27	10.00	1.85	0.50	21 50	2831
1.63	1.00	0.82	11.23	10.00	9.07	9.00	2.16	1.00	23 00	2784
5.90	0.99	0.82	11.54	10.00	9.75	9.00	1.79	1.00	24 75	2980
1.62	1.80	1.65	12.40	11.00	10.36	10.00	2.04	1.00	32 00	2825
4.98	1.08	0.82	11.71	11.00	10.82	10.00	0.89	1.00	25 00	3015
2.01	1.72	1.65	9.15	9.00	8.13	8.00	1.02	1.00	30 00	3002
7.44	1.03	0.82	10.19	11.00	9.81	10.00	0.38	1.00	30 00	2990
3.53	0.71	0.85	9.22	9.00	8.07	8.00	1.15	1.00	24 50	2978
9.46	1.27	1.03	13.78	12.00	10.46	10.00	3.32	2.00	26 00	2689
7.61	1.89	1.85	14.04	12.00	10.09	10.00	3.95	2.00	31 00	2688
3.00	1.33	1.23	11.16	9.50	9.95	9.00	1.21	0.50	27 00	2813
2.72	1.24	1.23	10.22	9.50	9.58	9.00	0.64	0.50	32 00	3125
1.89	0.87	0.62	8.93	7.50	7.97	7.00	0.96	0.50	--------	2754
1.70	0.87	0.62	8.80	7.50	8.14	7.00	0.64	0.50	20 00	2746
1.17	0.59	0.62	8.15	7.50	7.89	7.00	0.26	0.50	22 00	3064

TABLE II.—NITROGEN AND PHOS

Chemist's number.	Name of Manufacturer and Brand.	Sample Taken From—
	EUREKA FERTILIZER CO., LANCASTER, PA.	
2745	No. 7 Grain and Grass,	N. E. Gobrecht & Bro., Hanover,
2902	No. 8 Fish & Bone Mixture,	N. E. Gobrecht & Bro., Hanover,
	THE FARMERS FERTILIZER WORKS, ELIZABETHTOWN, PA.	
2930	Farmers Club,	H. H. Martin, Manheim,
2931	Farmers Crop Grower,	H. H. Martin, Manheim,
2943	Farmers Crop Grower,	James H. Rice, Alinda,
2967	Farmers Crop Grower,	J. B. Rohrer, Port Trevorton,
2913	Grain and Grass Special,	W. B. Gochnauer, Lititz,
2965	Grain and Grass Special,	I. L. Luck, Selinsgrove,
	JOSEPH R. GAWTHROP, KENNETT SQUARE, PA.	
2720	Ammoniated Special Phosphate for Corn, Oats & Wheat.	Joseph R. Gawthrop, Kennett Square,
2719	Champion Fertilizer for Wheat and Grass,	Joseph R. Gawthrop, Kennett Square,
	GRIFFITH & BOYD COMPANY, BALTIMORE, MD.	
2859	Farmers Gem,	Wm. H. Heckert's Sons, Bakerstown,
3035	Pure Dissolved Animal Bone,	E. L. White, Danville,
3026	Queen Guano,	Artley Brothers, Muncy,
2853	Queen Guano,	Harmony Cereal Mills, Harmony,
2729	Queen Quano,	J. B. Spera, Dillsburg,
	S. M. HESS & BROTHER, INC., PHILADELPHIA, PA.	
3042	Standard Super Phosphate,	F. Wannuth, Boyertown,
	THE HUBBARD FERTILIZER CO., BALTIMORE, MD.	
2778	Hubbard's Oriental Guano,	Wesley Seltzer, Orwigsburg,
	M. P. HUBBARD CO., INC., BALTIMORE, MD.	
3044	Hubbard's Atlas Guano,	L. A. Geiger, Joanna,
2715	Hubbard's Atlas Guano,	A. M. F. Stiteler, Uwchland,
2876	Hubbard's Atlas Guano,	Joseph Whitmoyer, Unityville,
3045	Hubbard's Ever Ready Compound,	L. A. Geiger, Joanna,
3027	Hubbard's Ever Ready Compound,	N. G. Adams, Paxinos,
2683	Hubbard's Ever Ready Compound,	Willis C. Herr, Strasburg,
	INTERNATIONAL AGRICULTURAL CORPORATION (BUFFALO FERTILIZER WORKS), BUFFALO, N. Y.	
3092	Buffalo Farmers Choice,	A. C. Daugherty, Grove City,
3088	Universal Crop Grower,	B. S. Talmadge & J. H. Sterrett, McKean,
	KOLLER FERTILIZER CO., SEITZLAND, PA.	
2947	Koller's Two & Ten Phosphate,	Summit Lumber Co., New Freedom,
	THE LANCASTER BONE FERTILIZER CO., LANCASTER, PA.	
2762	Corn, Grass & Wheat Special,	H. J. S. Gernert, Myerstown,
3075	Corn, Grass & Wheat Special,	Levi Imler, Bedford,
2842	Corn, Grass & Wheat Special,	S. N. Moore, Echo,
3094	Lancaster Favorite,	Ira Bechtel, Roaring Springs,
2775	Lancaster Favorite,	Elsworth Erdman, Klingerstown,
	THE LANCASTER CHEMICAL CO., LANCASTER, PA.	
2693	No. 4 Rising Sun,	H. M. Stauffer, Leola,
2919	No. 12 Wheat Special,	G. Moyer, Mt. Joy,

PHORIC ACID FERTILIZERS.—Continued.

Moisture.	NITROGEN.		PHOSPHORIC ACID.						Selling price per ton at place of selection.	Chemist's number.
			Total.		Available.		Insoluble.			
	Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.		
%	%	%	%	%	%	%	%	%	$	
5.83	0.80	0.82	11.10	11.00	10.02	10.00	1.08	1.00	24 00	2745
2.45	0.51	0.41	11.76	11.00	10.48	10.00	1.28	1.00	20 90	2902
7.82	*2.09	2.47	10.27	9.60	8.83	8.00	1.44	1.00	37 00	2930
5.67	0.86	0.82	11.12	9.00	9.08	8.00	2.04	1.00	24 00	2931
5.04	0.76	0.82	11.03	9.00	9.50	8.00	1.53	1.00	--------	2943
6.95	0.78	0.82	10.73	9.00	9.01	8.00	1.72	1.00	--------	2967
6.62	0.73	0.82	12.97	----------	10.99	10.00	1.98	--------	25 00	2913
4.32	0.82	0.82	12.72	----------	10.62	10.00	2.10	--------	--------	2935
3.09	1.14	1.13	6.51	6.00	5.94	5.00	0.57	1.00	32 00	2720
4.70	1.65	1.25	11.01	6.00	7.57	4.00	3.44	2.00	35 00	2719
5.18	0.89	0.85	11.74	11.00	10.53	10.00	1.21	1.00	28 00	2859
3.16	*1.66	2.00	12.62	11.00	11.22	10.00	1.40	1.00	36 00	3035
4.18	0.78	0.85	11.00	10.00	9.21	9.00	1.79	1.00	26 00	3026
4.66	0.83	0.85	10.87	10.00	8.96	9.00	1.91	1.00	25 00	2853
4.48	0.90	0.85	10.52	10.00	9.18	9.00	1.34	1.00	24 00	2729
4.86	0.93	0.82	11.53	11.00	10.76	10.00	0.77	1.00	--------	3042
4.35	1.24	0.82	12.40	11.00	9.95	10.00	2.45	1.00	24 00	2778
6.56	1.15	0.83	13.88	13.50	12.86	12.00	1.02	1.50	24 50	3044
2.65	1.03	0.83	13.64	13.50	12.56	12.00	1.08	1.50	25 50	2715
3.59	0.93	0.83	13.42	13.50	12.34	12.00	1.08	1.50	23 25	2876
3.14	0.97	0.83	11.98	11.50	10.32	10.00	1.66	1.50	26 00	3045
6.48	0.95	0.83	12.14	11.50	9.91	10.00	2.23	1.50	25 00	3027
5.52	0.99	0.83	10.72	11.50	*9.70	10.00	1.02	1.50	26 00	2683
2.33	0.85	0.80	11.79	11.00	10.20	10.00	1.59	1.00	28 00	3092
4.84	*0.54	0.82	17.59	15.00	16.25	14.00	1.34	1.00	29 00	3088
12.17	*1.24	1.65	14.67	11.00	12.82	10.00	1.85	1.00	27 25	2947
5.74	1.10	0.82	13.33	11.00	10.84	10.00	2.49	1.00	26 00	2762
2.87	1.00	0.82	12.14	11.00	10.23	10.00	1.91	1.00	23 00	3075
6.79	0.79	0.82	12.50	11.00	10.52	10.00	1.98	1.00	24 00	2842
2.27	*0.90	1.20	12.22	12.00	11.01	11.00	1.21	1.00	28 00	3094
6.60	1.15	1.20	12.37	12.00	11.35	11.00	1.02	1.00	24 00	2775
5.70	2.37	2.47	12.56	13.00	*10.20	12.00	2.36	1.00	38 00	2693
7.02	*1.32	1.65	12.41	11.00	10.33	10.00	2.08	1.00	28 00	2919

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*Deficient.

TABLE II.—NITROGEN AND PHOS

Chemist's number.	Name of Manufacturer and Brand.	Sample Taken From—
2966	No. 14 Wheat & Grass,	A. W. Aucker, Port Trevorton,
3050	No. 14 Wheat & Grass,	J. L. Royer, Myerstown,
2883	No. 14 Wheat & Grass,	Albert Warn, Hughesville,
2769	No. 18 Success Brand,	Howard Potteiger, Sinking Springs,
2695	No. 18 Success Brand,	H. M. Stauffer, Leola,
2884	No. 18 Success Brand,	Albert Warn, Hughesville,
	LEBANON FERTILIZER WORKS, LEBANON, PA.	
3126	Levan's Golden King Fertilizer,	Harry Kieffer, Pine Grove,
3032	Levan's Grain & Grass Fertilizer,	A. C. Bittner, Catawissa,
	LISTERS AGRICULTURAL CHEMICAL WORKS, NEWARK, N. J.	
2829	Listers Crescent Ammoniated Superphosphate, 1916.	Arndt & Redline, Cherryville,
3153	Listers Crescent Ammoniated Superphosphate, 1916.	Aaron Dewalt, Bethlehem,
3004	Listers Grain Phosphate,	F. E. Bailey, Northbrook,
3005	Listers Plant Food, 1916,	F. E. Bailey, Northbrook,
3141	Listers Plant Food, 1916,	R. D. Sames, Coopersburg,
3025	Listers Soil Improver,	G. B. M. Fry, Muncy,
2691	Listers Soil Improver,	Harry Mullen, Christiana,
3106	Listers Soil Improver,	S. J. Ringler, Elk Lick,
3013	Listers Superior Ammoniated Superphosphate, 1916.	W. E. Ervin, Somerton,
	FREDERICK LUDLAM CO., BALTIMORE, MD.	
3110	Ludlams Cecrops Fertilizer Wheat Mixture,	N. B. Shober, Garrett,
	THE MAPES FORMULA & PERUVIAN GUANO CO., NEW YORK, N. Y.	
2840	Mapes General Crop (1916 Brand),	H. F. Kistler, Wannamakers,
	THE MARTIN FERTILIZER CO., PHILADELPHIA, PA.	
3147	Martin's Ammoniated Phosphate, 3-8,	Elmer Crouthamel, Ottsville,
2828	Martin's Crop Producer,	Josh. Shoemaker, Walnutport,
3145	Martin's Pure Dissolved Animal Matter,	Aaron Snyder, Kellers Church,
	THE MILLER FERTILIZER CO., BALTIMORE, MD.	
2960	M. B. S.,	Francis Baker, Lewisburg,
2997	M. B. S.,	Miller T. Harkins, Hickory Hill,
2865	M. B. S.,	Hartley & Blaine, Turbotville,
2950	Miller's No. 1 Special,	Anderson Brothers, New Park,
2995	Miller's No. 1 Special,	Miller T. Harkins, Hickory Hill,
2880	Miller's No. 1 Special,	Herman Keebler, Montoursville,
2734	Miller's No. 2 Special,	Brillinger & Swartz, Emigsville,
2996	Miller's No. 2 Special,	Miller T. Harkins, Hickory Hill,
2971	Miller's No. 2 Special,	H. W. Ickes, Port Royal,
	NASSAU FERTILIZER CO., NEW YORK, N. Y.	
2941	Old Hickory, 1916,	W. S. Stuart, Carlisle,
	G. OBER & SONS COMPANY, BALTIMORE, MD.	
2760	Ober's Climax Ammoniated Compound,	A. M. Brandt, Campbelltown,
2758	Ober's Liberty Fish Guano,	A. M. Brandt, Campbelltown,
2802	Ober's Liberty Fish Guano,	C. C. Catherman, Hartelton,
3054	Ober's Liberty Fish Guano,	Norman G. Miller, Cessna,
2976	Ober's Sun Beam Guano,	Wm. M. Atkinson, McVeytown,
2757	Ober's Sun Beam Guano,	Alfred Gerberich, Grantville,

PHORIC ACID FERTILIZERS.—Continued.

Moisture.	NITROGEN.		PHOSPHORIC ACID.						Selling price per ton at place of selection.	Chemist's number.
			Total.		Available.		Insoluble.			
	Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.		
%	%	%	%	%	%	%	%	%	$	
2.57	0.72	0.82	11.60	11.00	10.52	10.00	1.08	1.00	23 50	2966
5.44	1.00	0.82	10.70	11.00	*9.68	10.00	1.02	1.00	24 00	3050
3.35	0.84	0.82	11.31	11.00	10.23	10.00	1.08	1.00	22 97	2883
5.26	1.79	0.82	13.20	13.00	*10.07	12.00	3.13	1.00	25 00	2769
5.82	1.69	0.82	12.64	13.00	*10.15	12.00	2.49	1.00	26 00	2695
4.60	0.78	0.82	11.24	13.00	*10.28	12.00	0.96	1.00	24.92	2884
3.98	0.94	0.82	12.14	11.00	10.35	10.00	1.79	1.00	25 00	3126
5.90	1.87	1.64	12.27	11.00	10.48	10.00	1.79	1.00	--------	3032
8.65	2.00	1.65	12.69	11.00	10.56	10.00	2.13	1.00	27 80	2829
3.29	2.38	1.65	14.12	11.00	11.31	10.00	2.81	1.00	29 50	3153
3.00	1.67	1.23	11.08	11.00	10.00	10.00	1.08	1.00	28 50	3004
4.82	1.07	0.82	11.03	11.00	10.07	10.00	0.96	1.00	25 50	3005
3.33	1.15	0.82	10.98	11.00	*9.64	10.00	1.34	1.00	26 00	3141
4.22	0.89	0.82	10.55	9.00	9.47	8.00	1.08	1.00	20 00	3025
2.09	1.15	0.82	10.78	9.00	9.70	8.00	1.08	1.00	24 00	2691
3.25	0.91	0.82	12.69	9.00	11.35	8.00	1.34	1.00	21 00	3106
2.87	3.30	3.29	12.53	11.00	10.55	10.00	1.98	1.00	45 00	3013
1.30	1.89	1.65	11.98	9.00	10.96	8.00	1.02	1.00	--------	3110
9.04	1.52	1.65	11.99	10.00	8.29	8.00	3.70	2.00	32 00	2840
3.17	*1.92	2.47	13.38	----------	11.96	8.00	1.42	--------	35 00	3147
5.16	1.18	1.03	12.50	----------	10.71	10.00	1.79	--------	--------	2828
7.23	1.66	1.65	14.85	----------	12.04	12.00	2.81	--------	32 00	3145
3.24	0.80	0.62	8.00	7.50	7.49	7.00	0.51	0.50	24 00	2960
0.86	0.68	0.62	7.90	7.50	7.01	7.00	0.89	0.50	24 00	2997
1.62	0.71	0.62	8.29	7.50	7.46	7.00	0.83	0.50	22 00	2865
3.21	1.82	1.65	11.95	10.50	10.93	10.00	1.02	0.50	30 00	2950
2.29	1.65	1.65	11.49	10.50	10.34	10.00	1.15	0.50	32 00	2995
3.71	1.51	1.65	11.39	10.50	9.92	10.00	1.47	0.50	31 00	2880
1.55	1.05	1.03	8.73	8.50	7.90	8.00	0.83	0.50	25 00	2734
1.50	1.23	1.03	8.88	8.50	8.18	8.00	0.70	0.50	27 00	2996
3.76	1.11	1.03	9.50	8.50	8.61	8.00	0.89	0.50	--------	2971
2.60	0.95	0.82	12.36	11.00	10.59	10.00	1.77	1.00	24 00	2941
7.42	*1.44	1.65	14.16	13.00	12.57	12.00	1.59	1.00	30 10	2760
8.46	1.04	1.00	14.80	14.00	14.42	13.00	0.38	1.00	26 70	2758
8.79	1.19	1.00	14.80	14.00	14.03	13.00	0.77	1.00	27 36	2802
7.81	1.12	1.00	14.53	14.00	13.96	13.00	0.57	1.00	28 00	3054
4.74	1.75	1.65	13.38	11.00	11.53	10.00	1.85	1.00	32 00	2976
5.45	1.57	1.65	12.25	11.00	11.74	10.00	0.51	1.00	--------	2757

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*Deficient.

TABLE II.—NITROGEN AND PHOS

Chemist's number.	Name of Manufacturer and Brand.	Sample Taken From—
	OXFORD PACKING WORKS, OXFORD, PA.	
2988	O. P. W. No. 2,	H. H. Miller, Collamer,
	OYLER & SPANGLER FERTILIZER WORKS, INC., GETTYSBURG, PA.	
2893	Special,	Biglerville Warehouse Co., Biglerville,
2895	Super Phosphate,	G. C. Myers, Gardners,
	PATAPSCO GUANO COMPANY, BALTIMORE, MD.	
2892	Patapsco Ammoniated Compound,	E. C. Thomas, Gettysburg,
2728	Patapsco Golden Crop Fertilizer, 1916,	L. E. Wiley, Dillsburg,
3081	Patapsco Golden Crop Fertilizer, 1916,	Summit Lumber Co., Clarks Summit,
	THE POLLOCK FERTILIZER COMPANY, BALTIMORE, MD.	
3061	Grain Special,	J. H. Scott, Petersburg,
	THE RAMSBURG FERTILIZER CO., FREDERICK, MD.	
2904	Ramsburg's Queen,	Aug. Hamme, York,
	RASIN-MONUMENTAL CO., BALTIMORE, MD.	
2821	Rasin's Royal Ammoniated Superphosphate,	Charles E. Gess, Easton,
2878	Rasin's Special Crop Preparation,	H. B. Low & Son, Orangeville,
2793	Rasin's Special Grain & Grass Superphosphate.	Kidder & Raymond, Oak Hall Station,
2877	Rasin's Special Grain & Grass Superphosphate.	H. B. Low & Son, Orangeville,
	READING BONE FERTILIZER COMPANY, READING, PA.	
3009	Reading All Crop Special,	Hebner & Kriebel, West Point,
2803	Reading Special Grain & Grass Producer,	O. F. Bowersox, Millmont,
2779	Reading Special Grain & Grass Producer,	Morris Moyer, Schuylkill Haven,
3148	Reading Special Grain & Grass Producer,	N. F. Sassaman, Ottsville,
	READING CHEMICAL CO., READING, PA.	
3053	General Crop Grower,	Berks County Almshouse, Reading,
3007	Farmers Favorite,	John Hampton, Norristown,
3041	Farmers Meat Mixture,	A. D. Trexler's Sons, Trexler,
3006	Reading Soil Builder,	John Hampton, Norristown,
2792	Reading Soil Builder,	John Kunkle, Mahanoy City,
3134	Reading Soil Builder,	F. L. Pfeifly, Lynnport,
	ROBERT A. REICHARD, ALLENTOWN, PA.	
2834	Lehigh Special Phosphate,	William Bitner, New Tripoli,
2773	Lehigh Special Phosphate,	George L. Dry, Topton,
	REICHARD HIDE & TALLOW CO., ASHLAND, PA.	
3050	Hercules,	D. W. & H. W. Grove, Catawissa,
	A. F. REIS, HANOVER, PA.	
2903	Reis' York County Special,	Frank Hoke, Spring Grove,
	F. S. ROYSTER GUANO COMPANY, BALTIMORE, MD.	
2879	Royster's Grain & Grass Special,	E. E. Renn & Son, Mansdale,
3116	Royster's Grain & Grass Special,	W. E. & D. B. Specht, Kantner,
3142	Royster's Grain & Grass Special,	Elios Yost, Kellers Church,

PHORIC ACID FERTILIZERS.—Continued.

Moisture.	NITROGEN.		PHOSPHORIC ACID.						Selling price per ton at place of selection.	Chemist's number.
			Total.		Available.		Insoluble.			
	Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.		
%	%	%	%	%	%	%	%	%	$	
3.30	1.76	1.44	10.89	11.00	10.19	9.00	0.70	2.00	31 50	2988
3.94	*1.35	1.65	15.08	----------	12.72	11.00	2.36	--------	30 00	2893
3.50	1.20	0.82	10.78	----------	9.06	9.00	1.72	--------	22 50	2895
5.16	1.01	0.82	12.00	11.00	10.66	10.00	1.34	1.00	24 00	2892
4.77	1.85	1.65	11.99	11.00	10.40	10.00	1.59	1.00	29 00	2728
2.87	1.92	1.65	13.00	11.00	10.32	10.00	2.68	1.00	23 50	3081
5.32	1.65	1.65	9.78	9.00	8.57	8.00	1.21	1.00	27 00	3061
6.25	0.49	0.41	11.88	----------	11.18	10.00	0.70	--------	20 00	2904
10.43	0.55	0.41	11.61	11.00	10.02	10.00	1.59	1.00	--------	2821
3.37	1.73	1.65	11.74	11.00	10.34	10.00	1.40	1.00	30 00	2878
7.39	0.93	0.82	11.91	10.00	9.36	9.00	2.55	1.00	24 25	2793
3.55	0.92	0.82	11.71	10.00	9.41	9.00	2.30	1.00	23 50	2877
2.09	1.97	1.64	13.19	11.00	10.45	10.00	2.74	1.00	36 00	3009
3.06	1.07	0.82	10.08	8.00	8.74	7.00	1.34	1.00	23 50	2803
4.21	1.04	0.82	10.20	8.00	8.72	7.00	1.48	1.00	26 00	2779
2.00	0.90	0.82	8.11	8.00	7.41	7.00	0.70	1.00	27 00	3148
3.14	0.97	0.82	13.71	13.00	11.86	12.00	1.85	1.00	--------	3053
2.73	1.57	0.82	12.13	11.00	*9.39	10.00	2.74	1.00	30 00	3007
1.82	0.68	0.82	8.34	9.00	7.83	8.00	0.51	1.00	--------	3041
2.91	1.70	1.64	12.67	11.00	*9.42	10.00	3.25	1.00	34 00	3006
2.27	1.68	1.64	12.69	11.00	*9.63	10.00	3.06	1.00	23 00	2792
4.90	*1.44	1.64	10.77	11.00	10.20	10.00	0.57	1.00	30 00	3134
6.15	1.53	1.64	12.93	13.00	11.91	12.00	1.02	1.00	30 00	2834
6.39	1.47	1.64	13.30	13.00	12.64	12.00	0.66	1.00	--------	2773
2.33	1.01	0.82	13.92	----------	10.86	10.00	3.06	--------	25 00	3030
1.66	0.92	0.82	13.55	----------	11.32	8.00	2.23	--------	25 00	2903
2.04	1.03	0.82	9.35	8.50	8.00	8.00	1.35	0.50	23 00	2879
3.01	1.05	0.82	10.18	8.50	8.20	8.00	1.98	0.50	26 00	3116
2.07	0.98	0.82	9.68	8.59	8.34	8.00	1.34	0.50	25 00	3142

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*Deficient.

TABLE II.—NITROGEN AND PHOS

Chemist's number.	Name of Manufacturer and Brand.	Sample Taken From—
2869	Royster's Penguin Ammoniated Superphosphate.	John F. Smith, White Hall,
2711	Royster's Special Wheat Grower,	Harvey L. Moses, Chester Springs,
2855	Royster's Special Wheat Grower,	Shever Brothers, Harmony,
2816	Royster's Special Wheat Grower,	Thomas Walter, Winfield,
	THE SCOTT FERTILIZER COMPANY, ELKTON, MD.	
2675	Scott's Crop Grower,	Sam Book & Brother, Quarryville,
3000	Scott's Crop Grower,	Edward Rupert, Oxford,
	SWIFT & COMPANY, INC., BALTIMORE, MD.	
2732	Ammoniated Phosphate,	G. W. Bamberger, Etters,
2748	Ammoniated Phosphate,	Allen Boeshore, Jonestown,
2702	Bone Meal & Phosphate Fertilizer,	Thomas Haines Co., Malvern,
2843	Bone Meal & Phosphate Fertilizer,	James McCullough, Jr., Kittanning,
2862	Bone Meal & Phosphate Fertilizer,	H. A. Snyder, Strawberryridge,
2920	Diamond "C" Grain Fertilizer,	D. Brinzer, Rheems,
2986	Diamond "C" Grain Fertilizer,	A. K. Kulp, Pottstown,
2791	Schuylkill Valley Favorite,	Kamerer Hardware Co., Lehighton,
2875	Schuylkill Valley Favorite,	Grant Johnson, Millville,
2951	Special Corn Grower,	A. M. Grove & Co., Muddy Creek Forks,
2706	Special Corn Grower,	Thomas Haines Co., Malvern,
2682	Wheat & Rye Grower,	Willis C. Herr, Strassburg,
2987	Wheat & Rye Grower,	A. K. Kulp, Pottstown,
	I. P. THOMAS & SON CO., PHILADELPHIA, PA.	
3051	Thomas' Triumph Manure,	M. A. Weik, Kleinfeltersville,
3146	Thomas' Wheat & Corn Guano,	Aaron Snyder, Kellers Church,
	JACOB TRINLEY & SON, LINFIED, PA.	
2717	Grain & Grass Grower,	A. M. F. Stiteler, Uwchland,
	F. W. TUNNELL & COMPANY, INC., PHILADELPHIA, PA.	
2718	Cereal Grower,	H. A. Mendenhall, Toughkenamon,
2698	Fall Grain Manure,	Edward Brinton & Sons, West Chester,
2764	Fall Grain Manure,	C. H. Mohler, Richland,
3138	Wheat Grower,	W. M. Gelman, East Maguncia,
2823	Wheat Grower,	A. H. Kohler, Easton,
	TUSCARORA FERTILIZER CO., BALTIMORE, MD.	
3136	Tuscarora's (1-8-0),	Jacob Cramer, New Tripoli,
	UNION CHEMICAL WORKS, INC., NORTH WALES, PA.	
3151	Two Eight Mixture,	Ruben Landis, Perkasie,
3010	Two Eight Mixture,	Charles Weghschneider, Line Lexington,
3150	Two Ten Mixture,	Byron Crouthamel, Perkasie,
	VIRGINIA-CAROLINA CHEMICAL CO. OF DELAWARE, BALTIMORE, MD.	
2909	V. C. Special Fish Preparation,	S. B. Brodbeck, Brodbeck,
2944	V. C. Star Superphospbate,	S. B. Brodbeck, Brodbeck,
	WASHINGTON, ALEXANDER & COOKE CO., CHARLESTOWN, W. VA.	
2674	W. A. & C.'s Wheat Special,	Albert Herr, Quarryville,

PHORIC ACID FERTILIZERS.—Continued.

	NITROGEN.		PHOSPHORIC ACID.						Selling price per ton at place of selection.	Chemist's number.
			Total.		Available.		Insoluble.			
Moisture.	Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.		
%	%	%	%	%	%	%	%	%	$	
3.24	1.87	1.65	12.12	10.50	10.46	10.00	1.66	0.50	29.70	2869
3.27	1.05	0.82	13.84	12.50	12.50	12.00	1.34	0.50	27 00	2711
3.10	1.12	0.82	13.71	12.50	12.05	12.00	1.66	0.50	28 00	2855
3.76	1.14	0.82	13.84	12.50	12.25	12.00	1.59	0.50	23 75	2816
5.35	1.68	1.65	12.76	----------	9.70	8.00	3.06	--------	28 00	2675
5.32	1.72	1.65	13.48	----------	9.78	8.00	3.70	--------	29 00	3000
4.29	0.96	0.82	11.38	----------	10.04	10.00	1.34	--------	24 00	2732
2.99	0.90	0.82	11.60	----------	10.58	10.00	1.02	--------	23 00	2748
6.65	0.85	0.82	19.78	20.00	*12.06	13.00	7.72	7.00	31 00	2702
2.12	0.85	0.82	20.84	20.00	*11.78	13.00	9.06	7.00	32 00	2843
1.98	0.85	0.82	20.21	20.00	*11.53	13.00	8.68	7.00	30 00	2862
2.81	0.91	0.82	10.10	----------	8.25	8.00	1.85	--------	25 00	2920
1.62	0.94	0.82	8.15	----------	*7.58	8.00	0.57	--------	25 00	2986
1.74	0.47	0.41	7.46	----------	6.95	7.00	0.51	--------	23 50	2791
3.48	0.64	0.41	9.22	----------	8.40	7.00	0.82	--------	20 00	2875
1.54	2.00	1.65	11.93	----------	10.34	10.00	1.59	--------	30 00	2951
6.55	1.74	1.65	11.74	----------	10.97	10.00	0.77	--------	31 00	2706
5.27	1.69	1.65	9.50	----------	8.73	8.00	0.77	--------	28 00	2682
2.36	1.70	1.65	8.76	----------	*7.80	8.00	0.96	--------	31 00	2987
4.52	0.98	0.82	11.93	10.50	10.91	10.00	1.02	0.50	26 00	3051
0.95	2.13	1.65	13.27	10.50	9.89	10.00	3.38	0.50	31 00	3146
7.22	3.00	2.47	13.14	11.00	8.29	6.00	4.85	5.00	37 50	2717
4.02	1.15	0.82	10.65	10.00	9.50	9.00	1.15	1.00	28 00	2718
3.70	1.15	0.82	15.37	13.00	13.33	12.00	2.04	1.00	30 00	2698
2.95	1.07	0.82	14.03	13.00	12.05	12.00	1.98	1.00	--------	2764
1.30	1.26	0.82	13.96	10.00	12.49	9.00	1.47	1.00	27 00	3138
2.20	0.86	0.82	11.16	10.00	10.01	9.00	1.15	1.00	--------	2823
2.92	1.22	0.82	11.31	8.50	9.52	8.00	1.79	0.50	21 00	3136
3.80	1.53	1.64	9.64	----------	9.00	8.00	0.64	--------	--------	3151
3.81	*1.22	1.64	9.53	----------	8.64	8.00	0.89	--------	31.00	3010
4.41	1.53	1.64	11.97	----------	11.01	10.00	0.96	--------	--------	3150
6.02	1.07	0.82	12.86	11.00	10.31	10.00	2.55	1.00	22 00	2909
6.63	0.50	0.41	10.45	9.00	9.11	8.00	1.34	1.00	19 00	2944
9.41	1.26	1.00	11.72	11.00	10.19	10.00	1.53	1.00	25 00	2674

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*Deficient.

TABLE II.—NITROGEN AND PHOS

Chemist's number.	Name of Manufacturer and Brand.	Sample Taken From—
	THE ROBERT A. WOOLDRIDGE COMPANY, BALTIMORE, MD.	
3073	Wooldridge's General Crop Grower,	Cyrus Brumbaugh, New Enterprise,
2907	Wooldridge's General Crop Grower,	Sam Shearer, Seven Valleys,
2863	Wooldridge's General Crop Grower,	H. V. Smith, Turbotville,
	YORK CHEMICAL WORKS, YORK, PA.	
3132	Dempwolf's Corn & Oats,	F. J. Lindner, Ringtown,
2678	Dempwolf's Dissolved Animal Bone,	Hiram Rea, Quarryville,
2737	Dempwolf's Dissolved Animal Bone,	Dover Farmers Co-operative Association, Dover.
3020	Dempwolf's Dissolved Animal Bone,	Lippincott & Eadie, Rosemont,
2785	Dempwolf's York Special,	W. A. Buck, Aquashicola,
2743	Dempwolf's York Special,	M. J. Sheffer, Hanover,
2918	Dempwolf's York Special,	J. Harry Summy, Landisville,
		Average,

PHORIC ACID FERTILIZER—Concluded.

Moisture.	NITROGEN.		PHOSPHORIC ACID.						Selling price per ton at place of selection.	Chemist's number.
			Total.		Available.		Insoluble.			
	Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.		
%	%	%	%	%	%	%	%	%	$	
5.68	0.92	0.82	9.53	9.00	8.45	8.00	1.08	1.00	--------	3073
2.09	0.97	0.82	9.95	9.00	8.74	8.00	1.21	1.00	--------	2907
3.13	0.95	0.82	10.33	9.00	8.93	8.00	1.40	1.00	23 50	2863
5.25	2.34	2.47	11.58	10.50	*9.67	10.00	1.91	0.50	43 00	3132
3.55	2.76	2.47	16.42	16.00	13.42	12.00	3.00	4.00	37 00	2678
5.61	2.76	2.47	18.52	16.00	12.46	12.00	6.06	4.00	35 70	2737
2.45	*2.17	2.47	17.57	16.00	14.83	12.00	2.74	4.00	40 00	3020
5.30	0.66	0.82	15.37	12.50	13.92	12.00	1.45	0.50	25 60	2785
3.96	0.90	0.82	13.59	12.50	11.87	12.00	1.72	0.50	24 00	2743
3.30	0.88	0.82	13.84	12.50	12.31	12.00	1.53	0.50	30 00	2918
4.34	1.28	----------	11.89	----------	10.20	--------	1.69	--------	27 34	--------

*Deficient.

TABLE NO. III.—GROUND
Furnishing Nitrogen

Chemist's number.	Name of Manufacturer and Brand.	Sample Taken From—
	BAUGH & SONS COMPANY, PHILADELPHIA, PA.	
2982	Baugh's Raw Bone Meal—Warranted Pure,	E. H. Keen & Co., Parkesburg,
2992	Baugh's Fine Ground Bone,	Wm. H. Fritz, Berwyn,
2857	Baugh's Fine Ground Bone,	O. W. Luck, Zelienople,
	CAMBRIA FERTILIZER COMPANY, JOHNSTOWN, PA.	
3097	Pure Fine Ground Bone Dust,	Cambria Fertilizer Co., Johnstown,
	THE COE-MORTIMER COMPANY, NEW YORK, N. Y.	
2789	Fine Ground Bone,	M. C. Zellner, Lehighton,
	HIRSH STEIN & COMPANY, CHICAGO, ILL.	
3159	Pure Raw Bone Meal,	L. Ritter, St. Marys,
3158	Special Pure Bone Meal,	L. Ritter, St. Marys,
	INTERNATIONAL AGRICULTURAL CORCORPORATION (BUFFALO FERTILIZER WORKS), BUFFALO, N. Y.	
3099	Buffalo Bone Meal,	Wm. Billier, Eckenrodes Mills,
2851	Buffalo Bone Meal,	Gelbach & Behm, Evans City,
	THE MARTIN FERTILIZER CO., PHILADELPHIA, PA.	
2721	Martin's Pure Raw Bone Meal,	Harry Pyle & Son, Chadds Ford Junction,
	NITRATE AGENCIES COMPANY, NEW YORK, N. Y.	
2735	N. A. C. Brand Ground Bone,	E. K. Emig, Emigsville,
	READING BONE FERTILIZER COMPANY, READING, PA.	
3049	Pure Raw Bone,	C. R. Bucher, Myerstown,
	THE SCOTT FERTILIZER COMPANY, ELKTON, MD.	
2999	Scott's Pure Ground Raw Bone,	Edward Rupert, Oxford,
2925	Scott's Pure Ground Raw Bone,	Wilmer Kershner, Witmer,
	SWIFT & COMPANY, INC., BALTIMORE, MD.	
2703	Ground Beef Bone,	Thomas Haines Co., Malvern,
2848	Ground Beef Bone,	M. C. Stewart, Indiana,
3689	Pure Bone Meal,	W. P. Rouse & Son, North East,
	JACOB TRINLEY & SON, LINFIELD, PA.	
2716	Pure Raw Bone Meal,	A. M. F. Stitcler, Uwchland,
	UNION CHEMICAL WORKS, INC., NORTH WALES, PA.	
3011	Raw Bone Meal,	Charles Weghschneider, Line Lexington,
	THE EMIL WAHL MANUFACTURING CO., PHILADELPHIA, PA.	
2707	Emil Wahl's Warranted Pure Philadelphia Button Bone Meal.	Hilles & Taggart, Norristown,
	YORK CHEMICAL WORKS, YORK, PA.	
2738	Dempwolf's Pure Ground Bone,	Dover Farmers Co-operative Assoc., Dover,
2705	Dempwolf's Raw Bone Meal,	Thomas Haines Co., Malvern,
		Average,

BONE FERTILIZERS.
and Phosphoric Acid.

Moisture.	CHEMICAL ANALYSIS. NITROGEN. Found.	CHEMICAL ANALYSIS. NITROGEN. Guaranteed.	CHEMICAL ANALYSIS. PHOSPHORIC ACID. Found.	CHEMICAL ANALYSIS. PHOSPHORIC ACID. Guaranteed.	MECHANICAL ANALYSIS. Fine.	MECHANICAL ANALYSIS. Coarse.	Selling price per ton at place of selection.	Chemist's number.
%	%	%	%	%	%	%	$	
6.49	3.82	3.70	21.50	21.50	54.00	46.00	51 00	2982
5.41	3.15	2.47	*16.01	16.49	66.00	34.00	52 00	2992
4.33	3.45	2.47	17.86	16.49	67.00	33.00	40 00	2857
3.55	*2.46	3.00	26.67	20.00	65.00	35.00	45 00	3097
3.17	2.63	2.47	23.53	22.88	49.00	51.00	40 50	2789
5.97	4.36	3.75	*19.64	20.00	51.00	49.00	45 00	3159
4.70	0.84	0.82	33.29	29.77	75.00	25.00	40 00	3158
3.30	2.58	2.20	24.19	22.00	46.00	54.00	37 00	3009
3.53	2.79	2.20	22.13	22.00	61.00	39.00	43 00	2851
5.26	*3.46	3.70	23.76	21.00	51.00	49.00	45 00	2721
8.40	2.41	2.46	28.89	22.88	73.00	27.00	44 00	2735
4.45	3.42	3.29	24.24	18.00	57.00	43.00	41 50	3049
4.65	3.83	3.70	23.71	21.00	48.00	52.00	49 00	2999
5.17	*3.48	3.70	23.75	21.00	56.00	44.00	46 50	2925
3.08	2.03	2.06	27.51	27.00	73.00	27.00	39 00	2703
2.75	2.23	2.06	27.45	27.00	72.00	28.00	40 50	2848
2.34	2.39	2.47	25.38	24.00	73.00	27.00	38 00	3089
6.28	4.35	3.70	20.28	20.00	51.00	49.00	45 00	2716
6.86	4.23	3.69	22.99	21.00	54.00	46.00	43 00	3011
10.93	*3.25	3.90	26.88	24.50	90.00	10.00	45 00	2707
3.30	2.70	2.47	23.32	23.00	70.00	30.00	39 75	2738
6.71	4.60	3.70	*20.12	22.00	40.00	60.00	49 00	2705
5.02	3.11	----------	23.78	----------	61.00	39.00	43 58	----------

*Deficient.

TABLE NO. IV.—ACIDULATED
Furnishing

Chemist's number.	Name of Manufacturer and Brand.	Sample Taken From—
	THE AMERICAN AGRICULTURAL CHEMICAL COMPANY, NEW YORK, N. Y.	
3058	12% Acid Phosphate,	Bruce Holderbaum, Bedford,
3018	14% Acid Phosphate,	Mark Hiltebeitel, Green Lane,
3082	16% Acid Phosphate,	J. Lyman Snyder, Eldredsville,
3071	Apex Acid Phosphate,	H. F. Gump & Son, Everett,
2763	Great Eastern Dissolved Acid Phosphate,	Adam Hoover, Wernersville,
3087	Great Eastern Dissolved Phosphate,	E. L. Smith, Union City,
2870	High Grade Superphosphate,	J. G. Rishel, Jerseytown,
3156	Wheelers Peerless Acid Phosphate,	Clinton Brader, Bethlehem,
2850	Wheelers Peerless Acid Phosphate,	P. J. Oesterling & Son, Butler,
	ARMOUR'S FERTILIZER WORKS, INC., BALTIMORE, MD.	
2826	Acid Phosphate, 16%,	County Poor House, Nazareth,
3059	Acid Phosphate, 16%,	W. S. Henderson, Alexandria,
2940	Acid Phosphate, 16%,	S. E. Shenk & Son, Newville,
	THE CENTRAL CHEMICAL CO., HAGERSTOWN, MD.	
3107	C. C. C. Dissolved Phosphate,	Lloyd Hay, Meyersdale,
	CHESAPEAKE CHEMICAL COMPANY, BALTIMORE, MD.	
3033	C. C. Co's 16% Dissolved Phosphate,	Simon Carl, Numidia,
	COE-MORTIMER COMPANY, NEW YORK, N. Y.	
2767	E. Frank Coe's Basic Fruit & Legume Phos. (Basic Lime Phosphate).	Charles Renno, Hamburg,
3123	E. Frank Coe's High Grade Soluble Phosphate.	King, Hoge & Co., Waynesburg,
2818	E. Frank Coe's High Grade Soluble Phosphate.	John Tanneous, Nazareth,
2933	E. Frank Coe's High Grade Soluble Phosphate.	D. M. Wertz & Co., Quincy,
	DUBOIS FERTILIZER WORKS, INC., DUBOIS, PA.	
3055	Acid Phosphate, 14%, 1917,	D. B. Griffith, Wolfsburg,
3078	Acid Phosphate, 14%, 1917,	D. B. Griffith, Wolfsburg,
2979	Acid Phosphate, 16%, 1917,	H. E. Lutz, Newton Hamilton,
3119	Acid Phosphate, 16%, 1917,	E. B. Maurer, Boswell,
3056	Lime Phosphate, 1917,	D. B. Griffith, Wolfsburg,
3118	Lime Phosphate, 1917,	E. B. Maurer, Boswell,
	EUREKA CHEMICAL COMPANY, BALTIMORE, MD.	
3067	Eureka Soluble Phosphate,	W. H. Nesbit, McConnellsburg,
	THE EUREKA FERTILIZER COMPANY, LANCASTER, PA.	
2901	No. 10 Corn and Oats,	N. E. Gobrecht & Bro., Hanover,
3074	Phosphoric Acid Special,	Adam Beach, New Enterprise,
	S. M. HESS & BROTHER, INC., PHILADELPHIA, PA.	
2747	High Grade Acid Phosphate,	Martin Arnold, Hanover,
2677	High Grade Acid Phosphate,	Charles Fritz, Quarryville,
	M. P. HUBBARD CO., INC., BALTIMORE, MD.	
2684	Hubbard's Dissolved Phosphate,	Willis C. Herr, Strasburg,

PHOSPHATE FERTILIZERS.
Phosphoric Acid.

Moisture.	PHOSPHORIC ACID.						Selling price per ton at place of selection.	Chemist's number.
	TOTAL.		AVAILABLE.		INSOLUBLE.			
	Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.		
%	%	%	%	%	%	%	$	
2.59	13.32	13.00	12.77	12.00	0.55	1.00	----------	3058
3.92	15.12	15.00	14.61	14.00	0.51	1.00	24 00	3018
3.23	18.33	17.00	17.31	16.00	1.02	1.00	21 50	3082
1.19	11.48	11.00	10.66	10.00	0.82	1.00	20 00	3071
3.68	15.24	15.00	14.67	14.00	0.57	1.00	----------	2763
5.07	18.47	15.00	16.94	14.00	1.53	1.00	23 00	3087
3.18	17.28	17.00	16.77	16.00	0.51	1.00	17 00	2870
5.97	15.75	15.00	14.09	14.00	1.66	1.00	----------	3156
3.60	16.07	15.00	14.54	14.00	1.53	1.00	22 00	2850
6.58	17.22	16.50	16.26	16.00	0.96	0.50	----------	2826
1.78	17.87	16.50	16.85	16.00	1.02	0.50	20 00	3059
2.76	17.50	16.50	17.05	16.00	0.45	0.50	21 00	2940
3.15	16.16	----------	15.71	14.00	0.45	----------	----------	3107
6.64	17.87	17.00	17.61	16.00	0.26	1.00	21 00	3033
2.08	14.16	14.00	13.50	13.00	0.66	1.00	21 00	2767
4.57	16.39	15.00	15.65	14.00	0.74	1.00	23 00	3123
3.35	16.71	15.00	16.01	14.00	0.70	1.00	18 85	2818
1.30	16.58	15.00	16.20	14.00	0.38	1.00	19 50	2933
2.27	14.29	15.00	14.16	14.00	0.13	1.00	19 50	3055
1.92	14.69	15.00	14.43	14.00	0.26	1.00	19 50	3078
2.51	16.10	17.00	*15.53	16.00	0.57	1.00	21 75	2979
2.05	15.93	17.00	*15.23	16.00	0.70	1.00	22 00	3119
1.93	10.00	9.00	8.15	8.00	1.85	1.00	18 50	3056
1.76	9.49	9.00	8.09	8.00	1.40	1.00	21 00	3118
1.29	16.16	14.50	15.39	14.00	0.77	0.50	18 85	3067
2.31	11.38	11.00	16.27	10.00	1.11	1.00	18 05	2901
8.61	17.18	17.00	16.16	16.00	1.02	1.00	20 50	3074
2.95	15.88	15.00	15.18	14.00	0.70	1.00	20 00	2747
4.99	15.17	15.00	14.79	14.00	0.38	1.00	19 00	2677
5.63	17.53	17.50	16.76	16.00	0.77	1.50	23 00	2684

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*Deficient.

TABLE IV.—ACIDULATED

Chemist's number.	Name of Manufacturer and Brand.	Sample Taken From—
	INTERNATIONAL AGRICULTURAL CORPORATION (BUFFALO FERTILIZER WORKS), BUFFALO, N. Y.	
3100	Buffalo Sixteen Per Cent.,	William Billier, Eckenrodes Mills,
3086	Buffalo Sixteen Per Cent.,	W. E. Grove, Diamond,
2841	Buffalo Sixteen Per Cent.,	John N. C. Lias, Dayton,
	KEYSTONE GRANGE EXCHANGE, MANSFIELD, PA.	
3122	Grangers Acid Phosphate,	Clinton Peppers, West Brownsville,
	KOLLER FERTILIZER COMPANY, SEITZLAND, PA.	
2946	Koller's High Grade Acid Phosphate,	Summit Lumber Co., New Freedom,
	LISTERS AGRICULTURAL CHEMICAL WORKS, NEWARK, N. J.	
2795	Listers Buyers Choice Acid Phosphate,	R. D. Forman, Centre Hall,
2917	Listers Buyers Choice Acid Phosphate,	J. Frank Lutz, Stevens,
2911	Listers Buyers Choice Acid Phosphate,	G. W. Martin & Co., Saltsburg,
	THE MARTIN FERTILIZER COMPANY, PHILADELPHIA, PA.	
2749	Martin's Acid Phosphate, 14%,	Lebanon Hardware Company, Lebanon,
2722	Martin's Acid Phosphate, 14%,	Harry Pyle & Sons, Chadds Ford Junction,
	THE MILLER FERTILIZER COMPANY, BALTIMORE, MD.	
2679	Acid Phosphate, 14%,	Bradley Brothers, Peach Bottom,
2881	Acid Phosphate, 14%,	Herman Keebler, Montoursville,
	G. OBER & SONS COMPANY, BALTIMORE, MD.	
2973	Ober's Tampa Acid Phosphate,	William M. Atkinson, McVeytown,
	OYLER & SPANGLER FERTILIZER WORKS, INC., GETTYSBURG, PA.	
2894	16 Per Cent.,	G. C. Myers, Gardners,
	PIEDMONT MT. AIRY GUANO CO., BALTIMORE, MD.	
2768	Piedmont 16% Acid Phosphate,	Malon Hoffman, Shoemakersville,
2740	Piedmont 16% Acid Phosphate,	H. H. Loosee, Menges Mills,
3062	Piedmont 16% Acid Phosphate,	John G. Simpson, Huntingdon,
	THE POLLOCK FERTILIZER CO., BALTIMORE, MD.	
3077	Dissolved S. C. Phosphate,	Irvin Earnest, Wolfsburg,
	RASIN-MONUMENTAL COMPANY, BALTIMORE, MD.	
3139	Rasin's Acid Phosphate,	S. K. Moore, Coopersburg,
	READING CHEMICAL COMPANY, READING, PA.	
3076	High Grade Phosphate,	Frank Nicodemus, Schellsburg,
	ROBERT A. REICHARD, ALLENTOWN, PA.	
2872	Acid Phosphate,	C. B. Crist, Millville,
	F. S. ROYSTER GUANO COMPANY, BALTIMORE, MD.	
3063	Royster's High Grade 16% Acid Phosphate,	Charles Huston & Brother, Three Springs,
3080	Royster's High Grade 16% Acid Phosphate,	Preston Brothers, Canton,

PHOSPHATE FERTILIZERS.—Continued.

	PHOSPHORIC ACID.							
	TOTAL.		AVAILABLE.		INSOLUBLE.			
Moisture.	Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.	Selling price per ton at place of selection.	Chemist's number.
%	%	%	%	%	%	%	$	
2.07	18.62	17.00	18.11	16.00	0.51	1.00	22 00	3100
1.17	18.65	17.00	17.95	16.00	0.70	1.00	24 00	3086
2.42	18.18	17.00	17.41	16.00	0.77	1.00	22 00	2841
1.65	17.68	------------	16.91	16.00	0.77	----------	20 00	3122
7.29	18.05	------------	17.86	14.00	0.19	----------	17 75	2946
4.44	15.75	15.00	14.79	14.00	0.96	1.00	20 40	2795
4.16	15.08	15.00	14.82	14.00	0.26	1.00	22 00	2917
4.39	14.26	15.00	*13.56	14.00	0.70	1.00	24 00	2911
5.52	15.75	------------	15.30	14.00	0.45	----------	----------	2749
8.62	15.12	------------	14.67	14.00	0.45	----------	21 00	2722
1.54	15.87	14.50	14.47	14.00	1.40	0.50	18 50	2679
1.87	15.74	14.50	13.83	14.00	1.91	0.50	22 00	2881
2.90	15.72	13.00	14.51	12.14	1.21	0.86	21 00	2973
4.88	18.27	------------	18.27	16.00	trace	----------	20 50	2894
5.36	17.67	------------	17.45	16.00	0.22	----------	----------	2768
2.77	16.67	------------	16.16	16.00	0.51	----------	21 50	2740
5.22	17.34	------------	17.21	16.00	0.13	----------	22 00	3062
5.10	15.95	15.00	14.99	14.00	0.96	1.00	20 00	3077
1.34	15.72	15.00	14.98	14.00	0.74	1.00	21 00	3139
2.36	18.92	17.00	18.15	16.00	0.77	1.00	20 00	3076
5.53	15.31	15.00	14.67	14.00	0.64	1.00	----------	2872
2.03	17.48	16.50	16.65	16.00	0.83	0.50	22 00	3063
3.75	18.15	16.50	16.11	16.00	2.04	0.50	23 00	3080

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*Deficient.

TABLE IV.—ACIDULATED

Chemist's number.	Name of Manufacturer and Brand.	Sample Taken From—
	I. P. THOMAS & SON CO., PHILADELPHIA, PA.	
2819	S. C. Phosphate,	George Hayden, Nazareth,
2820	16% Acid Phosphate,	George Hayden, Nazareth,
	TUSCARORA FERTILIZER COMPANY, BALTIMORE, MD.	
2836	Acid Phosphate, 14%,	Jacob Cramer, Tripoli,
	THE J. E. TYGERT COMPANY, PHILADELPHIA, PA.	
3038	12% Acid Phosphate,	W. H. Siegfried, Kempton,
3127	14% Acid Phosphate,	Emil Frederick, Conyngham,
	VIRGINIA CAROLINA CHEMICAL CO., BALTIMORE, MD.	
3102	V. C. 14% Acid Phosphate,	N. H. Deiner, Brookville,
3079	V. C. 14% Acid Phosphate,	H. M. Spaulding & Son, Troy,
3103	V. C. 16% Acid Phosphate,	N. H. Diener, Brookville,
	THE ROBERT A. WOOLDRIDGE COMPANY, BALTIMORE, MD.	
2864	Wooldridge's Dissolved Soluble Phosphate,	H. V. Smith, Turbotville,
		Average,

PHOSPHATE FERTILIZER—Concluded.

Moisture.	PHOSPHORIC ACID.						Selling price per ton at place of selection.	Chemist's number.
	TOTAL.		AVAILABLE.		INSOLUBLE.			
	Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.		
%	%	%	%	%	%	%	$	
6.00	16.71	14.50	16.39	14.00	0.32	0.50	17 48	2819
6.50	18.92	16.50	17.58	16.00	1.34	0.50	18 45	2820
2.50	17.28	14.50	15.30	14.00	1.98	0.50	17 00	2836
1.54	13.99	13.00	13.54	12.00	0.45	1.00	18 50	3038
4.92	16.83	15.00	14.44	14.00	2.39	1.00	23 00	3127
1.50	15.65	15.00	15.27	14.00	0.38	1.00	----------	3102
5.35	16.52	15.00	16.39	14.00	0.13	1.00	22 00	3079
1.72	18.92	17.00	18.41	16.00	0.51	1.00	22 50	3103
3.46	11.58	11.00	11.26	10.00	0.32	1.00	19 00	2864
3.59	16.09	----------	15.30	----------	0.79	----------	20 68	----------

TABLE NO. V.—ROCK AND
Furnishing Phosphoric

Chemist's number.	Name of Manufacturer and Brand.	Sample Taken From—
	THE CONSUMERS CHEMICAL CORPORATION, NEW YORK, N. Y.	
2814	Consumer's Pure-Sure Phosphate & Potash,	Harry Miller, Mifflinburg, ----------------
2786	Consumer's Pure-Sure Phosphate & Potash,	Lewis Steigerwalt, Sittlers, ----------------
	F. W. TUNNELL & COMPANY, PHILADELPHIA, PA.	
2723	Revised Grain & Grass Compound, ---------	Edward A. Pugh, Oxford, ----------------
	THE J. E. TYGERT COMPANY, PHILADELPHIA, PA.	
2932	Dissolved Phosphate & Potash, ------------	D. W. Faust & Son, Chambersburg, ------
2908	Dissolved Phosphate & Potash, -------------	A. G. Tayler, Glenville, ------------------
		Average, ------------------------------

POTASH FERTILIZERS.

Acid and Potash.

	PHOSPHORIC ACID.						POTASH.					
	Total.		Available.		Insoluble.							
Moisture.	Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Selling price per ton at place of selection.	Chemist's number.
%	%	%	%	%	%	%	%	%	%	%	$	
5.78	10.42	10.00	9.11	9.00	1.31	1.00	2.08	2.00	2.08	--------	26 50	2814
5.48	11.19	10.00	8.93	9.00	2.26	1.00	2.04	2.00	2.04	--------	32 00	2786
4.18	11.54	11.00	*9.18	10.00	2.36	1.00	1.24	1.00	1.24	--------	32 50	2723
3.33	12.42	11.00	10.89	10.00	1.53	1.00	1.44	1.00	1.44	--------	24 00	2932
5.20	12.96	11.00	12.32	10.00	0.64	1.00	1.16	1.00	1.16	--------	22 50	2908
4.79	11.71	--------	10.09	--------	1.62	------	1.59	--------	--------	--------	27 50	--------

*Deficient.

TABLE NO. VI.—MISCELL

Chemist's number.	Name of Manufacturer and Brand.	Sample Taken From—
	THE AMERICAN AGRICULTURAL CHEMICAL COMPANY, NEW YORK, N. Y.	
3129	Phospho Plaster,	L. H. Doan, Berwick,
	DOWNING PHOSPHATE CO., BRUNSWICK, GA.	
2681	Liberty Brand Pulverized Untreated Phosphate.	Sprecher & Ganss, Lancaster,
	FEDERAL CHEMICAL CO., COLUMBIA, TENN.	
3114	Mt. Pleasant Tennessee Brown Phosphate Rock.	C. H. Schmucker, Friedens,
	A. F. REIS, HANOVER, PA.	
2905	Reis' Bone & Tankage,	N. T. Bentz, Spring Grove,
	YORK CHEMICAL WORKS, YORK, PA.	
2954	Dried Ground Blood,	Red Lion Farmers Co-operative Association, Red Lion.

ANEOUS FERTILIZERS.

Moisture.	NITROGEN.		PHOSPHORIC ACID.						Selling price per ton at place of selection.	Chemist's number.
			Total.		Available.		Insoluble.			
	Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.		
%	%	%	%	%	%	%	%	%	$	
8.89	----------	----------	6.61	----------	4.10	2.00	2.51	--------	--------	3129
0.62	----------	----------	*30.78	31.50	--------	--------	--------	--------	16 50	2681
1.00	----------	----------	*27.66	32.00	--------	--------	--------	--------	15 00	3114
5.41	5.79	5.36	11.49	10.00	--------	--------	--------	--------	40 00	2905
10.98	13.10	13.00	----------	----------	--------	--------	--------	--------	106 00	2954

*Deficient.